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ABSTRACT

The primary purpose of this study was to determine the value of familiarizing third grade teachers with specific reading skills and to describe the effects of their using the word-attack element of the Wisconsin Design for Reading Skills Development (WDRSD) as an instructional management system for improving the achievements in reading comprehension, reading vocabulary, and total reading. Secondary purposes were to determine the differences between high, middle, and low aptitude subgroups and between male and female subgroups. During 1973-74, the experimental group of 285 students received WDRSD treatment, and the control group of 220 students did not. During May 1974, all students were given the Short Form Test of Academic Aptitude and the Comprehensive Test of Basic Skills to determine aptitude and achievement. The tests of hypotheses showed no significant difference in reading comprehension, reading vocabulary, and total reading achievement between treatment and control group; and no difference in reading between high, middle, and low aptitude pupils of the two groups. However, in both experimental and control groups, female subgroups surpassed their male counterparts. (Author/TS)

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COMPARATIVE VALUE OF A SYSTEMATIC DIAGNOSTIC AND PRESCRIPTIVE APPROACH TO THE TEACHING OF READING (INSTRUCTIONAL MANAGEMENT SYSTEM)

By

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B. A. University of South Dakota at Vermillion, 1955

M. A. Michigan State University at East Lansing, 1968

Ed. S. Michigan State University at East Lansing, 1970

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Dissertation Submitted in Partial Fulfillment of
The Requirements for the Degree of
Doctor of Philosophy

WALDEN UNIVERSITY

December, 1975

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COMPARATIVE VALUE OF A SYSTEMATIC DIAGNOSTIC AND PRESCRIPTIVE APPROACH TO THE TEACHING OF READING (INSTRUCTIONAL MANAGEMENT SYSTEM) IN THIRD GRADE, WATERFORD, MICHIGAN 1973-1974

Elliott, Robert Curtis

Walden University

Advisor: Dr. John R. Heckerl

The Problem: The problems related to teaching reading have often been provided contradictory solutions, recent ones entailing Instructional Management Systems.

Purpose of the Study: The primary purpose of this study was to determine the value of familiarizing third grade teachers with specific reading skills and to describe the effects of their using the word-attack element of the Wisconsin Design for Reading Skill Development (WDRSD) as an Instructional Management System for improving the achievements in reading comprehension, reading vocabulary and total reading. Secondary purposes were to determine the differences between high, middle and low aptitude subgroups and between male and female subgroups.

Methodology: During 1973-74, the experimental group, 285 students, received WDRSD treatment; the control group, 220 students, did not. During May 1974, all students were given the Short Form Test of Academic

Aptitude and the Comprehensive Test of Basic Skills to determine aptitude and achievement.

Conclusions: The tests of hypotheses showed no significant difference in reading comprehension, reading vocabulary and total reading achievement between the treatment group and the control group after one year. Similarly, the tests indicated no significant difference in reading comprehension, reading vocabulary and total reading achievement between high, middle and low aptitude pupils of the two groups. In both the experimental and the control groups, female subgroups surpassed their male counterparts.

Recommendations: A school district that decides to adopt the Wisconsin Design for Reading Skill Development should prepare for considerable staff planning, in-service education and commitment to the development of an Instructional Management System.

A longitudinal study should be made to determine if reading vocabulary, reading comprehension and total reading achievement are significantly affected by use of the six elements of the Wisconsin Design.

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to

My Wife Donnette

and Children

Todd
Staci
Sherri
Beth

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CHAPTER I

INTRODUCTION

This study is designed to evaluate an instructional management model for the improvement of reading in the Waterford School District, Waterford, Michigan. The development of this model is funded by Elementary Secondary Educational Act (ESEA) Title III through the Michigan Department of Education's Experimental and Demonstration Centers Program.

The Waterford School District program was designed to improve reading achievement progress rates through the development and implementation of a Reading Instruction Model. The Model incorporated the means of assisting teachers in diagnosing strengths and deficiencies in students' skill development, in prescribing appropriate instruction, and in using assessment data to improve program offerings. It was proposed that the improvement in students' reading progress rates would be dependent upon the ability of the teacher to identify and diagnose specific difficulties as well as to prescribe appropriate corrective or developmental instruction.

Program activities during the second year of implementation focused on six elementary schools that are characterized by relatively high concentrations of students who qualify for E.S.E.A. Title I assistance. The major objective of the program was to increase reading progress rates of elementary students by improving teacher performance in

the areas of diagnosis, prescription and evaluation.[1] The vehicle used to aid teachers in improving their performance in these areas was the Wisconsin Design for Reading Skill Development.

The Wisconsin Design was selected for this project for several reasons. First, it met the requirements that teachers expressed in a district-wide survey for a structured organization for teaching reading skills. Second, the Design was flexible enough to allow adaptation to local needs. On a broader scale, the Design was considered as a vehicle to launch the district into objective-based reading instruction while local development of this concept was continuing. Third, the Design was, in itself, an accountability model.

The Wisconsin Design is primarily an instructional management model in reading. It provides for an assessment of an individual student's reading skills, the means for teachers to constantly monitor the progress of their students, and a profile of skill attainment for each student.

Instructionally, the Design provides the teacher with an extensive reading skills sequence, an index of materials to teach these skills, and criterion-referenced tests to evaluate skill attainment.

The Wisconsin Design is an adaptation of educational concepts advanced by developers of a system of Individually Guided Education (IGE) at the elementary school level. As explained by Otto and Askov,

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[1]John R. Heckerl, "Waterford School District--Evaluation Report of an Instructional Management Model for the Improvement of Reading," First report submitted to the Michigan Department of Education--Experimental and Demonstration Centers Program, July, 1973, p. 7.

> The Design conforms to the concept of Individually Guided Education (IGE) described by Klausmeier and others (Klausmeier, Quilling, Sorenson, Way, and Glasrud, 1971). Briefly, IGE is a system of elementary education that includes: a statement of behavioral objectives; an instructional program of materials, equipment, and student and teacher activities designed to achieve the objectives; procedures for the initial placement of the students and subsequent monitoring of their progress; guidelines for organizing instruction; and measurement tools and evaluation procedures.[2]

These concepts were developed through the systematic application of research and development strategies to the improvement of educational practice by the Wisconsin Research and Development Center for Cognitive Learning and cooperating educational agencies. Klausmeier and others explain:

> A system of Individually Guided Education is a comprehensive system of education and instruction designed to produce higher educational achievements through providing well for differences among students in rate of learning, in learning style, and in other characteristics. IGE is more comprehensive than individualized instruction when individualized instruction is viewed as instruction in which a student learns through interacting directly with instructional materials or equipment with little or no assistance from a teacher. In IGE self-instructional materials or systems are simply one important kind of instructional material or medium to be used in instructional programming for the individual.[3]

The Waterford Reading Instructional Model (WRIM) is an adaptation of the Wisconsin Design for Reading Skill Development employed to meet

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[2]Wayne Otto and Eunice Askov, Rationale and Guidelines: The Wisconsin Design for Reading Skills Development (National Computer Systems, 1972), pp. 1-2.

[3]H. J. Klausmeier, M. Quilling, J. S. Sorenson, R. S. Way and G. R. Glasrud, Individually Guided Education and the Multi-Unit Elementary School (University of Wisconsin Research and Development Center for Cognitive Learning), p. 15.

the unique needs of the Waterford School District.[4] The Design offers a means of organizing materials and establishes procedures to permit efficient retrieval of them. It allows for an eclectic approach to instruction and may be used with any developmental reading program.

Statement of Purpose

The primary purpose of this study was to determine the value of familiarizing third grade teachers with specific skills associated with the reading process and to determine and describe the effects of using the word-attack element of the Wisconsin Design for Reading Skills Development (WRDSD), as an instructional management system for improving the reading skills achievements of pupils in third grade. A secondary purpose was to determine the differences and/or similarities between high, middle, and low aptitude student sub-groups within the treatment group. It was also a secondary purpose to determine the differences and/or similarities of male and female sub-groups within the treatment group.

Hypotheses

This study may be considered an investigation into the realm of reading research. Certainly every elementary teacher who takes seriously the teaching of reading has experienced the quandary about basic approaches in the teaching of reading. The point is also made that this researcher has found no published study to evaluate the comparative

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[4]John R. Heckerl, "Waterford School District--Evaluation Report of an Instructional Management Model for the Improvement of Reading," Second report submitted to the Michigan Department of Education--Experimental and Demonstration Center Programs, July, 1974, p. 6.

value of this systematic, diagnostic and prescriptive approach to reading being used in the Waterford District. More definite information than that available is needed for analyzing, planning and assessing the changes resulting from the introduction of a systematic, diagnostic and prescriptive approach to the teaching of reading. Of particular interest to the investigator are the relationships and changes stated in the following null hypotheses which were investigated.

1. There are no differences in reading comprehension, reading vocabulary or total reading achievement resulting from the use of the Wisconsin Design for Reading Skill Development. (WDRSD)
2. There are no differences in reading comprehension, reading vocabulary or total reading achievement between high, middle, and low aptitude student sub-groups resulting from the use of the Wisconsin Design for Reading Skill Development. (WDRSD)
3. There are no differences in reading comprehension, reading vocabulary or total reading achievement between male and female student sub-groups resulting from the use of the Wisconsin Design for Reading Skill Development. (WDRSD)

Methodology

Procedure: The experimental group consisted of 285 third grade students who received WDRSD treatment. The control group consisted of

220 third grade students who did not receive WDRSD treatment. This study consisted of two groups of children with adequate homogeneity within the groups for the purposes of the research. To insure that there was adequate homogeneity between experimental and control groups, only children from Title I elementary schools were included. They were all third graders during the spring of 1974 and had been in regular attendance at their respective elementary buildings during the 1973-74 school year. During the 1973-74 school year students in the treatment group were diagnostically evaluated using the WDRSD assessment materials. The teacher then prescribed learning experiences that were specific for the individual child. The teacher taught to whatever weaknesses were apparent in the individual child's diagnostic reading profile. During the month of May, 1974, all students in the experimental and control groups were given the Short Form Test of Academic Aptitude. All children involved in this study were also given the Comprehensive Test of Basic Skills as a post-test during the month of May, 1974.

Analysis of Data: The dependent variables in this study are reading comprehension, reading vocabulary, and total reading as measured by the corresponding reading sub-tests of the Comprehensive Test of Basic Skills Form S 1973. Since intact classes were used, academic aptitude was measured by the Short Form Test of Academic Aptitude (1970) Norms. If there had been a significant difference between the treatment and control groups on this measure along with a correlation between aptitude and reading comprehension, then academic aptitude would have been used as a covariant. There was not a significant difference between the treatment and control groups on this measure;

therefore, a one-way analysis of variance was conducted with the dependent variable. Data were analyzed through the services of Systematic Studies Department, Oakland Schools, Pontiac, Michigan.

Definition of Terms

Throughout this study the following terms were used and are defined as follows:

1. Individually Guided Education (IGE) is a systematic conceptual scheme of elementary education that includes: a statement of behavioral objectives, an instructional program of materials, equipment, and student and teacher activities designed to achieve the objectives; procedures for monitoring progress; guidelines for organizing instruction; and measurement tools and evaluation procedures.
2. Wisconsin Design for Reading Skill Development (WDRSD) conforms to the concept of individually guided education (IGE).
3. Waterford Reading Improvement Model (WRIM) is a local adaptation of the Wisconsin Design for Reading Skill Development.
4. Criterion referenced tests are tests constructed of test items that are based on objectives which are assessed with regard to an absolute or criterion referent rather than a relative referent.

Basic Assumptions

This study was based on the following assumptions:

1. The Comprehensive Test of Basic Skills Form S 1973, developed and published by California Test Bureau/ McGraw Hill Del Monte Research Park, Monterey, California 93940, is a valid and reliable measure of reading vocabulary, reading comprehension and total reading.
2. The Short Form Test of Academic Aptitude (1970 Norms), developed and published by California Test Bureau/ McGraw Hill Del Monte Research Park, Monterey, California 93940, is a valid and reliable measure of academic aptitude.
3. There is adequate homogeneity between the experimental and control groups for the purposes of the study. Since intact classes were used, it is assumed that assessing academic aptitude and selecting students from designated E.S.E.A. Title I elementary buildings provided the necessary homogeneity for the purposes of this study.

CHAPTER II

REVIEW OF LITERATURE

Historical Overview

The teaching of reading has been in the vanguard of the education process since the beginning of education of our history as a nation. Wozencraft[1] indicated that many different types of programs of varying emphases were tried during this early period. However, from the beginning of education in the first New England colonies, the teaching of reading was the primary function of the school. As educators became more experienced and sophisticated with the various components in the teaching of reading, many philosophical differences began to be debated. Much debate has occurred related to which method should be employed in the teaching of reading.

The New England Primer was used almost universally during the early part of the nation's history. It emphasized learning to read by the alphabet or ABC method. Ichelsamer is credited as being one of the first to advocate the use of the phonics method.[2] Wozencraft[3] disclosed that at a later date Webster introduced the Blue and Black Speller which

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[1]Marian Wozencraft, "Reading Methods When Grandmother was a Girl," Journal of Reading 8 (January 1965): 155.

[2]Donald L. Cleland and Harry B. Miller, "Instruction in Phonics and Success in Beginning Reading," Elementary School Journal 65 (February 1965): 280.

[3]Wozencraft, p. 158.

stressed the phonics approach as a means of unifying and purifying spoken English in America.

It is also suggested by Wozencraft[4] that the whole word method began at the time of Joseph Jacotel (1770-1840) who thoughtfully worked out detailed lessons on how to present words. During the middle of the 19th Century, Horace Mann, persuaded of the disadvantages of the phonics method, was advocating the teaching of beginning reading through the whole word method. During this same period were introduced McGuffey's Eclectic Readers. These Readers increasingly gained favor in reading programs, becoming the prototype of the modern basal reader.[5]

Changes in American practice related to the teaching of reading during this time were directly attributable to Prussian influences and the great German educator Henry Pestalozzi. Horace Mann gives us a statement of the origin of Pestalozzi's famous method. Related to both the whole word method and his method of object teaching, Mann describes a reading lesson which he observed in a Prussian school.

The teacher first drew a house upon the blackboard, and here the value of the art of drawing--a power universally possessed by Prussian teachers--became manifest. By the side of the drawing and under it, he wrote the word house in the German scripthand, and printed it in the German letter. With a long pointing rod--the end being painted white to make it more visible--he ran over the form of the letters--the children, with their slates before them and their pencils in their hands, looking at the pointing rod and tracing the forms of the letters in the air.

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[4]Ibid.

[5]Cleland and Miller, p. 281.

The next process was to copy the word house, both in script and in print, on the slates. Then followed the formation of the sounds of the letters of which the word was composed.[6]

As the 19th Century came to a close a new analytic approach to the teaching of reading was distinguishable. This method was being used in some of the more progressive schools. The analytic method entailed starting with the complete sentence, then breaking the sentence down or analyzing it into words.[7] About this time the sentence method was advanced by George L. Farnham. It consisted of a readiness period similar to that prescribed in today's reading program. The reading itself was taught by the discovery method, also being advocated today.[8]

The impact of the Gestalt psychology was beginning to be felt in educational circles during the early part of the 20th Century. The theory lent credence to the introduction of whole words or complete sentences as the initial unit of instruction. During the mid-thirties and continuing until the mid-forties, the phonics decoding emphasis was in a state of descendancy. However, it appears that education today is renewing the emphasis placed on decoding in beginning reading instruction.[9]

It is generally recognized that all children in the same grade are not able to read out of the same textbook due to varying levels of

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[6]Nila Banton Smith, American Reading Instruction (Park Ridge, Ill.: Silver Burdett Company, 1965), pp. 77-82.

[7]Wozencraft, p. 160.

[8]Ibid., p. 155

[9]Jeanne Chall, Learning to Read, The Great Debate (New York: McGraw Hill Book Co., 1967), p. 1.

achievement and abilities.[10] In reviewing the progress of reading instruction, Smith indicated that more innovation has been effected during the last fifty years than during the 300 previous years.[11] There has been an enormous growth in controlled experimental programs since the early 50's.

Individualizing Instruction

The following four fundamental principles concerning reading should serve as a basis for evaluating trends in reading instruction, according to Fay:

> 1. The act of reading involves both the perception of word forms and the understanding of the author's meaning.
>
> 2. Children are different and they learn differently, with the result that methods and materials must be adjusted to these differences. It is in relation to differences that the concept of reading has greatest significances.
>
> 3. Reading is a tool that is used in many ways. A reading program must be broadly conceived to include a variety of word-study skills, concern for personal development through reading, and development of comprehension and interpretation skills.
>
> 4. Inasmuch as reading is a broad avenue to learning, the reading program must also be concerned with students' reading-study skills in content areas. The reading of stories in a reader, or development of mechanical skills, could hardly be conceived as a total reading program.[12]

Fay[13] also points out that growth in reading achievement is but part of the total growth pattern of an individual. Growth in reading

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[10]Ibid., p. 13

[11]Nila Banton Smith, "What Have We Accomplished in Reading," The Education Digest 22 (September 1961): 42

[12]Leo Fay, "Trends in the Teaching of Elementary Reading," Phi Delta Kappan 41 (November 1966): 347

[13]Ibid., p. 346.

cannot be set apart from other aspects of growth. It is not a separate strand of learning that can be pulled out and worked on whenever an adult decides to teach a child to read. Scientific investigations recognize that reading is an integral part of total child growth. Reading maturation accompanies physical growth, mental growth, emotional and social maturity, experiential background, and language development.

Arguments for breaking down uniformity of instruction gained support as measurements became more sophisticated. Wallach and Kogan[14] described how children differed in both intelligence and creativity. Guilford[15] discusses differences in terms of at least 80 elements of intellect. It also has become clear, from the writing of Thomas and Thomas[16] that great differences between ability and performance are possible and that inequalities in intellect, physical ability, and social behavior, great in childhood, increase as students move through the grades. As educators became familiar with these and other studies, they began to make changes in both curriculum and instruction.

In addition to the advances in educational measurements, there were significant developments in instructional theory. Three major movements seem evident in research in instructional theory. Each of these contributes toward the individualization of instruction. The first of these can be identified as the body of research based on the programmed approach to learning and the reinforcement work done by

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[14] M. A. Wallach and N. Kogan, Modes of Thinking in Young Children (New York: Holt, Rinehart and Winston, Inc., 1965).

[15] J. P. Guilford, The Nature of Human Intelligence (New York: McGraw Hill, 1967).

[16] R. M. Thomas and S. M. Thomas, Individual Differences in the Classroom (New York: McKay, 1965).

B. F. Skinner.[17] This work has resulted in the development of programs for pacing cognitive learning at various rates and the provision of reinforcement for the learner when a correct response is made to a problem or question.

While Skinner's work largely has been done with animals, pigeons in particular, he has captured a following of educators. Programmed teaching by text and machine became popular in the early 1960's. Such teaching was an attempt to obtain the kind of behavioral control shown possible in the laboratory. Programmed learning through texts with the exception of reading has largely disappeared from the school scene. However, the movement is not dead. Highly sophisticated programs are being developed for use with the computer. Programs range from graduate level courses or course support programs in physics, chemistry and biology to elementary mathematics and reading.

Another movement is in the area of structural analysis and has its base in the work of Jean Piaget.[18] His work also involves the cognitive level of learning and with the new insight we have gained in recent years in the cognitive development in children. He deals with structural analysis of the curriculum and with a similar analysis of the teaching art. Piaget's analysis of intellectual growth captured the imagination of a wide audience. Piaget proposes that intelligence--adaptive thinking and action--develops in a sequence of stages related to age. Each stage sees the elaboration of new mental abilities which

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[17] B. F. Skinner, "Teaching Machines," Scientific American 205 (November 1961): 201-385. See also B. F. Skinner, Science and Human Behavior (New York: Macmillan, 1953).

[18] Jean Piaget, The Origins of Intelligence in Children, trans., M. Cook (New York: International Press, 1952).

set the limits and determine the character of what can be learned during that period. Stage I continues from birth until age two. This stage is referred to as the sensory motor period. Stage II, the pre-operational stage, encompasses ages two through seven. This is a period of language acquisition and symbolic play. Stage III is the period of concrete operations. Roughly, between the ages of seven and eleven children begin to internalize actions. Children now do things in their heads. They can think about things rather than having to touch things. Stage IV, the last stage, is the stage of formal operations. Between the ages of twelve and fifteen youngsters begin to think about thoughts and to reason.

Many educators who are followers of Piaget analyze the structure of various disciplines with the notion that, by having scholars develop a basic structure for their disciplines and by coordinating this structure with the work of psychologists in analyzing the intellectual development of the child, we will develop an instructional program which may challenge the optimum learning power of the child. Many of the promoters of this instructional theory see the acquisition of content as the primary purpose of students.

A third movement which deals with the affective domain is traceable to the work that has been done by followers of Carl R. Rogers, and is reflected primarily in the work of Arthur W. Combs.[19] Combs recognizes the importance of developing independently strong people in order for them to function effectively in today's relativistic, ambiguous

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[19]A. W. Combs, "Human Side of Learning," National Elementary Principal 52 (January 1973): 38-42. See also A. W. Combs, D. L. Avila, and W. W. Purkey, The Helping Relationship Source Book (Boston: Allyn and Bacon, 1971).

society. The strength of Combs' research points to the importance of how one feels about himself as a determiner of what he will learn, how great his insight will be, and what functional use he will be able to make of his own learnings and insights. Combs' research suggests that when children are able to take responsibility for their own learning their capacity to learn is accelerated over what might occur with well-developed curriculum materials or intricately-paced programs with their immediate reinforcements. The liberating effect of such an approach seems to improve the child's opportunity to learn more than is being taught, for it develops him as an independent person. Combs' major concern is with motivating children. This critique is the theoretical and research background, then, out of which comes the variety of practices designed to individualize instruction.

Teaching needs to be pupil centered. It is not the method per se that frequently is the crucial element in teaching.[20] The method must be adapted to the pupil. The teacher must change techniques to fit the learner's response characteristics. And a method of teaching is adequate only if the teacher knows enough about the child so that the method may be adapted to the specific child.[21]

One of the newer approaches to reading emphasizes the nature of the learner and considers the individual child to be the determining factor in the process around which all experiences must be planned and all skills taught. Since each child displays different needs, characteristics, and responses in the learning process, the teacher must

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[20]Emerald Dechant, "Teacher Differences and Reading Method," Education 86 (September 1965): 42.

[21]William P. McLoughlin, "Individualization of Instruction vs. Nongrading," Phi Delta Kappan 53 (February 1972): 379-380.

direct all instruction not to the group or to the class, but to the individual. Stauffer pointed out that research on human growth and development reveals certain important principles relevant to education.

> 1. No group has yet been found in which the individuals composing it possess equal amounts of any one ability.
>
> 2. Performances vary so greatly as to indicate that no single requirement is adequate as a stimulus to a majority of the group.
>
> 3. A study of the learning process discloses that it is absurd to set up as standard a definite quantity of performance and expect each member of the group to accomplish just that amount and no other.[22]

Stauffer[23] also stressed that primary consideration in schools should be efficiency of instruction, rather than, as has so often been true, ease of administration.

The Diagnostic and Prescriptive Role

Modern developmental reading programs start where the child is and progress with him. Continual diagnosis of the individual child's reading provides the basis for correcting his difficulties and for supplementing his gaps in learning.

It is generally acknowledged that children do not learn at the same rate, nor do they come to each new problem with the same background of experience. Therefore, a child may be able to learn one skill quickly and lag on others. Harris has emphasized that the diagnosis of individual needs is basic in planning a reading program. He stated:

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[22]Russell G. Stauffer, "Individualized Reading Instruction--A Backward Look," Elementary English 36 (May 1959): 338.

[23]Ibid., p. 341.

> Many of the children who have problems in reading have not been successful in programs which meet the needs of the majority of children. An analysis of a child's specific reading difficulties should precede instruction to discover his present level and areas of success or failure.[24]

The National School Public Relation Association, during the organization's 1970 convention, released a report called "Reading Crisis: The Problems and Suggested Solutions." Two of the conclusions, based on recent research, are as follows:

> The classroom teacher is the single most important factor in whether, and how well, a child learns to read.
> Teaching should be carried on by enthusiastic teachers who are trained in identifying reading skills and in matching problems appropriate corrective techniques and materials.[25]

The importance of the teacher's accurate perception of pupil skill development in reading is presented in a variety of professional literature. The premise is clear that in teaching any complex skill such as reading, the appropriate sub-skills be sequentially taught in a manner that will result in the most efficient acquisition of the desired ultimate skill. For this type of teaching to occur it is necessary that the reading teacher maintain an accurate and continuing awareness of the learner's developmental status.

Diagnosis without ensuing corrective prescription is of no value. It remains clear, however, that accurate diagnosis is antecedent to correction. This point is succinctly stated by Johnson when she says, "It is true that teachers who best learn to read children can best help

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[24]Albert J. Harris, How to Increase Reading Ability (New York: Longmans, Green, 1956), pp. 285-286.

[25]NEA Reporter, July 24, 1970, p. 1.

children learn to read."[26]

The imperative nature of the diagnostic/prescriptive process is also alluded to by Johnson. She states, in part:

> Ideally these interferences are detected and dealt with at the earliest possible moment. It is crucial that they be assessed and corrected as early as possible.[27]

Dechant also gives emphasis to diagnosis as an integral part of the schools reading program when he writes:

> No reading program is complete without diagnosis. Every child has a right to continuous diagnosis. Teachers should know what the child's present level of achievement is and to what level he may progress.[28]

Sustaining diagnostic efforts on the part of the reading teacher is, according to Cohn and Cohn, a requisite to effective teaching.

> In education, diagnosis must be continuous. In part this is so because new learnings often depend on the already learned skills and knowledges. This then places a responsibility on the educator and especially on the reading teacher. She must ever be alerted to new and changing growth of these boys and girls.[29]

Strang has added her support to the imperative cause of diagnosis as shown in the following quotation:

> A skillful teacher continuously interweaves diagnosis and instruction. In every lesson he notes student's strengths and weaknesses in reading and tries to find causes of their lack of progress. By tabulating and summarizing the information about all the students, the teacher can gain understanding of the class as a whole.

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[26]Barbah Lea Johnson, "Maximum Teacher Effectiveness," The Reading Teacher (November 1969): 126.

[27]Ibid., p. 130.

[28]Emerald V. Dechant, Improving the Teaching of Reading (Englewood Cliffs: Prentice-Hall, Inc., 1964), p. 223.

[29]Stella M. Cohn and Jack Cohn, Teaching the Retarded Reader (New York: Odyssey Press, Inc., 1967), p. 16.

> The appraisal process pinpoints the students' present stage of development. Instruction starts from there and is guided by the teacher's knowledge of a psychological sequence of reading skills.[30]

The Era of Instructional Management Systems

It must be clearly recognized that the individualization of instruction requires complex decision-making based upon a variety of diagnostic information. Students are guided into individualized learning activities in accordance with their past achievements and present needs and interests. Often, students accept greater responsibility for directing their own learning. Keeping track of students, their achievements and their expectations is a monumental management task. A major technological development has been the creation of sets of software to support instructional management information systems. In turn, the major function of such systems is to improve decision-making relative to the curriculum and individual students. Waterford School District and others are currently developing and testing instructional management systems.

The investigator, therefore, will focus his attention in the review of literature upon several instructional management systems that hold promise for assisting teachers to manage reading instruction and materials more effectively.

Individually Guided Education (IGE). "IGE is a comprehensive system of education and instruction designed to produce higher educational achievements through providing well for differences among students

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[30]Ruth Strang, Diagnostic Teaching of Reading (New York: McGraw-Hill Book Company, 1964), p. 28.

in rate of learning, learning style, and other characteristics."[31] The major components of IGE are: (1) An organization for instruction, a related administrative organization at the building level, and another arrangement at the central office level, together these are called a Multi-Unit School-Elementary (MUS-E); (2) A model of instructional programming for the individual students; (3) A model for developing measurement tools and evaluation procedures; (4) Curriculum materials, related statements of instructional objectives, and criterion-references tests and observation schedules; (5) A program of home-school communications that reinforces the school's efforts by generating the interest and encouragement of parents and adults whose attitudes influence pupil motivation and learning; (6) Facilitative environments in school buildings, school system central offices, state education agencies, and teacher education institutions; (7) Continuing research and development to generate knowledge and to produce tested materials and procedures.[32]

Stanford Computer Assisted Instruction (CAI). Since its beginning in 1965, this systems management approach has been committed to the development of a reading program that was to be assisted by a computer that would develop further models for instructional research and produce practical learning systems. The project's most successful effort has been individualization of instruction. This was demonstrated at the completion of the first year of the project. Data showed a four thousand

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[31] H. J. Klausmeier, M. Quilling, J. S. Sorenson, R. S. Way and G. R. Glasrud, Individually Guided Education and the Multi-Unit Elementary School (University of Wisconsin Research and Development Center for Cognitive Learning, 1971), pp. 15-30.

[32] Ibid.

main-line problem completion difference between low achievers and high achievers.[33] The research data also indicated there was a difference in the rate of progress through the curriculum and the fact that it was not correlated with the response rate. The average response rate was four per minute with small variations among the learners. Schemes of optimizing learnings and other procedures for individualization were said to be the reason for pupil success.[34]

Southwest Regional Laboratory, Kindergarten Reading and Support Programs (SWRL-KRSP). This kindergarten reading program was described and data on its developmental testing was presented by Baker.[35] The term program is given the specific definition of "a system of instruction in which the procedures used to achieve stated objectives are reproducible from classroom to classroom." The program is objectives based, and development follows systematic feedback and revision. Skills which are objective-based include: ninety words for sight recognition, word attack skills, and comprehension skills. Criteria of mastery performance varies from seventy-five to eighty per cent. The program spans thirty weeks with a daily rate of twenty minutes per day. Materials include pupil booklets and sixty paperback reading books, planned for use at a rate of two per week. Other evaluation data were reported by

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[33] R. C. Atkinson, "Computerized Instruction and the Learning Process," American Psychologist 23 (April 1968): 225-239.

[34] J. C. Fletcher and R. C. Atkinson, "An Evaluation of the Stanford CAI Program in Initial Reading (Grades 1 through 13)," Unpublished manuscript, Stanford University, 1971.

[35] E. L. Baker, "Developing a Research Based Kindergarten Reading Program," Experiments in Kindergarten Reading (Inglewood, Calif." Southwest Regional Laboratory, 1969).

Sullivan, which illustrated how detailed formative evaluation leads to program revision and improvement.[36]

Individually Prescribed Instruction (IPI). Beck and Bolvink[37] described the first four years of IPI by the Learning Research and Development Center at the University of Pittsburgh. They reported the main characteristics of this approach are: (1) Opportunities provided for differential rates of progress of learners through sequences of learning objectives; (2) Learning mastery must be proven prior to moving into the next objective; (3) Much reliance is placed on self-starting, self-motivation, and self-evaluation on the part of the learner; (4) Emphasis is placed on the development of individualized techniques and materials of instruction.

Project Program for Learning in Accordance with Needs (PLAN). PLAN functions on five major points as described by Flanagan: (1) Learners select their own learning objectives which are generated for grades one to twelve with the teacher's help--five objectives, each requiring two or three hours to achieve, are grouped into a module intended for about two weeks work; (2) Teaching-learning units are developed for each module: a teaching-learning unit lists objectives, materials and alternative study routes; (3) Mastery of objectives is evaluated to determine subsequent pupil learnings and placements; (4) Guidance and individual planning for pupils is provided through feedback relevant to success of

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[36]H. J. Sullivan, "Variables Affecting the Success of a Beginning Reading Program," Experiments in Kindergarten Reading (Inglewood, Calif.: Southwest Regional Laboratory, 1969).

[37]I. L. Beck and J. O. Bolvink, "A Model for Non-gradedness: The Reading Program for Individually Prescribed Instruction," Elementary English 46 (February 1969): 130-135.

performance, or prognoses of probably success in specific endeavors. The pupils are familiarized with all of the available opportunities, are aided in accepting and formalizing goals, and assisted in managing their own development; (5) Pupil development is managed by micro-teaching, modeling, and practice, followed by inservice training. Finally, the computer is used as a clerical, teacher-support, management device.[38] Recent evaluation and research activities of Project PLAN were reported by Wright.[39]

Concluded Advantages of Instructional Management System (WDRSD). Employing an Instructional Management System (WDRSD) with a generous supply of resources at hand should enable teachers to individualize instruction to a greater degree. That is, children who are making good progress in skill development do not have to endure the drudgery of instruction in matters they have mastered. They can spend their time at more p oductive tasks such as independent reading or special research and reporting projects while the teacher is secure in the knowledge that they have learned the basics. Those students who demonstrate less than optimal progress can participate in exactly those activities which they need in order to bring their skill profile into line. Wasted instructional effort, because a task was too easy or too difficult for a particular child is eliminated. Opportunities exist for cross-age or

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[38]J. C. Flanagan, "Individualizing Education," Education 90 (February-March 1970): 191-206.

[39]C. E. Wright, "Evaluation data and their uses in an individualized education program." American Institutes of Research. Paper presented at the meeting of the American Psychological Association, Miami, Florida, September, 1970. Also, "Project PLAN Progress Report," Education 90 (February-March 1970): 261-269.

cross-grade grouping for short-term instruction in specific skills. The System also provides teachers with a meaningful way to discuss student progress with parents or the students themselves.

There are two other purported advantages claimed by some for the use of Instructional Management Systems. An Instructional Management System allows everyone--teachers, administrators, parents, students--to operate within a clearly established set of guidelines concerning what is to be done, how it is to be done, and how you know whether or not you have accomplished the objective. Global, diagnostically useless evaluations are replaced by specific assessments which more clearly prescribe instruction for a particular child or group.

Concluded Disadvantages of Instructional Management System (WDRSD). This investigator would be remiss if he did not cite certain cautions regarding research products that individualize and manage instruction.

Johnson and Pearson conclude that there are at least six things that bother them about Instructional Management Systems.

1. Their psycholinguistic naivete. We know that language systems--the phonology, grammar and lexicon--are interdependent. In essence, language is indivisible; yet Instructional Management Systems seem to fractionate it and destroy its essential nature.

2. Their "assembly-line" underpinnings. We think the factors involved in learning to read are too complex to be dealt with through assembly-line thinking. In our opinion these systems stress content, not process, in the framework of a tightly organized structure leaving little room for incidental learning.

3. Their concern for skill at the expense of interest. Instructional Management Systems can become so concerned with observable and measurable that we lose sight of things not so readily observable.

4. Their advocacy of sequencing separable reading skills. While the idea may appeal to our sense of logic, there

> is precious little evidence to support the existence of separate skills, let alone separate skills which can be placed into a sequence of hierarchy.
>
> 5. The validity of their assessment instruments. Instructional Management Systems assume that the tests provided for measuring attainment of objectives are valid indices of the skills at issue. Yet we are unaware of any documentation which would suggest that the sub-tests in any of the systems have been validated by relating sub-test performance to any generally accepted measure of a real reading task.
>
> 6. The very notion of mastery itself. What is at issue is whether or not mastering a specific skill improves a child's ability to read or comprehend running test. Why bother with Instructional Management Systems if there is no payoff in the criterion task (reading) which the whole system ought to be trying to improve.[40]

Arthur Brown reflects that Instructional Management Systems may be viewed as the "inappropriate applications" of the engineering rationality.

> On the matter of taste, I must confess to a certain antipathy to the mechanistic orientation of the movement. People seem to disappear or move to the wings of the educational stage while tape recorders, file cabinets, computers, records, models, and flow charts move to the center. The terminology leaves me cold: inputs, outputs, feedback, systems analysis, delivery of educational services. Finally, the philosophy: pure scientific realism. If the proponents of the movement do have a theory of man and a theory of reality that are supportive of their educational theory--and often this is not the case--it is that people are merely machines, only more complex; that they are nothing more than products of their conditioning; and that all things, including human qualities, are objectifiable, quantifiable and predictable.[41]

Concern for efficiency has required some educators to employ a management ideology, one whose fundamental interest is in the strict

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[40]Dale D. Johnson and David P. Pearson, "Skills Management Systems: A Critique," The Reading Teacher 28 (May 1975): 757-64.

[41]A. Brown, "What Could Be Bad? Some Reflections on the Accountability Movement," English Journal 62 (March 1973): 461-63.

control of human activity so that schools can efficiently shape their raw material (that is, students) into predetermined products. Demands for a business oriented accountability and competency based performance measures have their historical base in the early twentieth century reform movements concern for efficiency. Selden and Apple emphasize this concept.

> Now no one will quarrel with the aim of making education more effective (though the conflict over what this means is critically important). However, the fact that the business world is the touchstone against which we are to compare our efforts makes it critically important that educators realize that this very comparison is a continuation of the factory orientation implicit in so much of the educational literature of this century. Once this realization sinks in, then we must begin to raise serious questions concerning the adequacy of employing business models for dealing with what are basically ethical and political, not technical, questions in education. Let us look historically first.[42]

During the last three years a computer assisted approach to accountability and performance based instruction has been developed. This system represents an application of data processing to the tasks of specifying behavioral objectives, curriculum development, achievement monitoring and instructional resources retrieved. Both in theory and in limited research projects the practical value of these concepts has been substantiated. However, until recently many of the models used to implement these concepts frequently become too cumbersome and expensive when put to the test of broad-scale application.[43]

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[42]Steven Selden and Michael W. Apple, "What May a 75-Year Involvement with the Language and Ideology of Business Tell Us," Educational Leadership 32 (April 1975): 453.

[43]R. W. Bill Brown, "A Systems Approach to Performance Based Instruction," Educational Technology 15 (April 1975): 58.

Summary

From the beginning of education in the United States, reading has had the primary role and has been in the forefront of the entire educational process. The history of reading instruction indicates clearly that attempts to individualize instruction are not new. Much of what went on in one-room schools was directed toward individual or very small groups of students. The history also shows that until education began to serve such a large portion of the population, education was individualized. With the large numbers of students entering schools in the early part of this century grade-level groups were formed and individualized instruction diminished. However, the later decades of this century saw a reaction against the age-graded, lock-step system in which nearly all students, regardless of differences among them, were constrained to study the same materials in the same way for the same length of time.

Innovative programs are attempting to individualize instruction. Many purportedly experimental programs have been abandoned because they have been label changes only and have not placed the material and instruction at the level of the learner.

Children have been placed in reading programs without sufficient knowledge of their achievement levels. It must be kept clearly in mind that the individualization of instruction requires complex decision-making based upon a variety of diagnostic information. Students are guided into individualized learning activities in accordance with their past achievements and present needs and interests. Good diagnostic tests are now available and these, along with good teacher judgment,

can provide adequate placement. Continual diagnosis of the individual child's reading provides the basis for correcting his difficulties and for supplementing his gaps in learning.

The development of technology adaptable to education has had effects on the movement toward individualizing instruction. Many early attempts at individualizing instruction were thwarted by a lack of resources, and especially by the tremendous amount of clerical work required. Sometimes, even more detrimental than the actual clerical work itself, was the time lag between testing and the return of the information. Information often did not reach the classroom in time to make a difference. Instructional Management Systems promise to provide the teacher with a better way of recording individual student progress. Included in this summary are several Instructional Management Systems, that have been reviewed by this investigator: (1) Project Program for Learning in Accordance with Needs (PLAN); (2) Individually Prescribed Instruction, (IPI); (3) The STANFORD Model of Computer Assisted Instruction, (CAI); (4) Southwest Regional Laboratory's Kindergarten Reading and Support Program (SWRL-KRSP); (5) Coleman's Educational Engineering; (6) Programmed Tutoring; and (7) Kettering Foundation's Institute for the Development of Educational Activities (I/D/E/A) and the University of Wisconsin's Research and Development Center for Cognitive Learning, which together developed an approach known as Individually Guided Education (IGE). Out of this work the Wisconsin Design for Reading Skills Development (WDRSD) evolved as a prototypic instructional management system for reading.

CHAPTER III

METHODS AND PROCEDURES

The purpose of this study was to determine if there was a significant difference between pupils in an Instructional Management Reading System Program and pupils in a traditional reading program. Chapter III was designed to describe: (1) The educational setting and population, (2) The subjects, (3) The operation of the program, (4) Instrumentation, (5) Instruments used.

Statements of general hypotheses made earlier in Chapter I will be reinstated in testable form.

The Educational Setting and Population

Waterford School District was selected for this study. The educational setting and population of this study were within the geographic confines of the Waterford Schools. The Waterford School District is a suburban community located in the geographical center of Oakland County. It is not a community in the true sense of the word, but more closely resembles a confederation of sub-communities that so often characterizes America's "newer suburbs." The fragmentation into sub-communities has resulted in a wide range of socio-economic backgrounds of groups and often diverse positions on educational issues. The citizens strongly support education as evidenced by the higher than average voted school millage accompanied by a lower than average state equalized valuation.

There are approximately 18,000 students in Waterford's twenty-seven elementary and six secondary schools. Waterford citizens and educational leaders alike are having to deal with a rapid change of educational realities related to this student population. For over two decades Waterford was a rapidly growing community. At present this growth has stopped and all signs point to a period of declining or stabilizing enrollments. Over the same period of time the district was experiencing a high staff turnover rate; a 25 percent change of staff from one academic year to the next was not unusual. This rate has now declined to 4 percent. Education has become a high cost item; per pupil costs have increased 300 percent in the last decade. Further, the relationships between staff members have changed due both to the legally mandated alterations resulting from professional negotiations and changes in the social economic milieu of the 1970's.

Thirty-three buildings comprise the district's school plant facilities. They include twenty-seven elementary schools containing grades, K-6, three junior high schools--grades 7-9, and three senior high schools--grades 10-12. The per capita pupil cost in 1973-74 was a little over $1,115.00, which is slightly over the average per capita expenditure in the state. The state equalized valuation of the district in 1973-74 was approximately $290,344,820.00, with a total tax rate of 37.53 mills and a 1974-75 budget in excess of $20,000,000.00. The pupil-teacher ratio in elementary schools was 28.2:1 in 1973-74. An average salary for teachers with ten years of teaching experience was $14,900.00.

The need, at this time in the Waterford Community Schools, is to apply a systematic planning model to the education of Waterford youth.

A system of identifying desired goals and objectives and the assessing of the status of the achievement of the desired educational objectives will enable the district staff to allocate financial and human resources to the areas of greatest need. What had just been described is, of course, an educational needs assessment. This needs assessment by the district led to the selection of the Wisconsin Design for Reading Skills Development as an Instructional Management System.

The Wisconsin Design was selected by the school district on an experimental basis for several reasons. First, it met the requirements that teachers expressed in a district-wide survey for a structured organization for teaching reading skills. Secondly, the Design was flexible enough to allow adaptation to local needs. On a broader scale, the Design was considered as a vehicle to launch the district into objective based reading instruction while local development of this concept was continuing. Thirdly, the Design was, in itself, an accountability model.[1] Why is it now urgent to apply such a planning model? It is not a new need; to some extent good education has always required good planning, but until the Michigan Department of Education provided the leadership in developing the Michigan Accountability Model the technology of systematic educational planning was not widely known and accepted in the Michigan education community.

The State Board of Education has adopted a six-step educational management system as a guide for improving Michigan education. The six steps are: The identification of common goals, the development of performance objectives, the assessment of educational needs, the analysis

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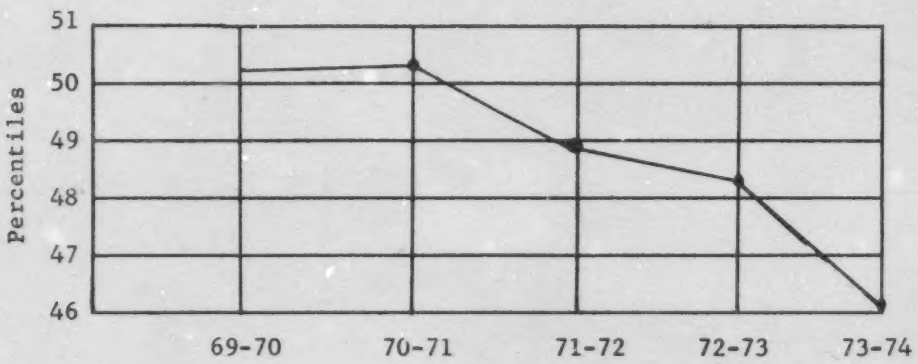
[1]Waterford Model for Instructional Planning, Waterford School District, 1974.

of delivery systems, the evaluation and testing of these systems or programs, and recommendations for educational improvement.[2]

Evidence that has been compiled over the past several years indicates that the Waterford community has changed. From 1967-73 increasing numbers of young people have dropped out of school before graduation. Similarly, Michigan Educational Assessment Program academic aptitude scores (see Table 1) have steadily decreased from 1967-74 at the fourth grade level.

TABLE 1

WATERFORD FOURTH GRADE
WORD RELATIONSHIP SCORE PROFILE



Other unobtrusive data suggest an erosion of the socio-economic status of many of the sub-communities in the district. These data point out that the educational program designed for the sixties and before may no longer be appropriate and change may be needed. But we can no longer

[2]Michigan Department of Education, Research, Evaluation and Development Services, Michigan Educational Assessment Program First Report: Objectives and Procedures (Lansing: Michigan Department of Education, August 1973), p. 7.

afford the previously used broken front approach to change; therefore, Waterford is currently moving to an educational management systems approach for the teaching of reading.

The Waterford public and educational community have long supported innovation and change in education. Perhaps the newness of the community and resultant growing pains requiring rapid change have contributed much toward this acceptance. Whatever the factors, Waterford citizens support systematic planning and were among the first in Michigan to organize a citizens' group to identify common goals of education. These were ratified by the Waterford Board of Education in 1972.[3]

The Subjects

The subjects involved in this study were: Third grade pupils in thirteen different elementary school buildings of the Waterford School District during the 1973-74 school year. Listed below are the names of the Waterford elementary schools from which subjects for the study were taken.

Third grade subjects at the following Waterford elementary schools were exposed to the Wisconsin Reading Design Treatment. (Experimental Group)

1. William Beaumont Community School
2. Hudson Covert Community School
3. Donelson Community School
4. Lotus Lake Community School
5. Henry R. Schoolcraft Community School
6. Williams Lake Community School

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[3]Waterford School District, Research and Evaluation Division, Needs Assessment Report to the Board of Education, Section E, 1972.

Third grade subjects at the following Waterford elementary schools were not exposed to the Wisconsin Reading Design Treatment. (Control Group)

1. Crescent Lake Community School
2. Laura Smith Haviland Community School
3. Della Lutes Community School
4. Frank J. Manley Community School
5. Pontiac Lake Community School
6. Riverside Community School
7. Stringham Community School

The subjects that comprise this 1973-74 group were third grade pupils in regular, self-contained classroom assignments in the Waterford School District. This 1973-74 group was divided into an experimental and control group for the purposes of this study.

The experimental group was composed of the total number of third grade pupils that were in 14 individual classrooms, in 6 different elementary buildings and were exposed to one year of Wisconsin Reading Design treatment. These 14 classrooms totaled 285 pupils; 148 boys and 137 girls, whose average age was eight years old. The experimental group subjects were taught by 14 regularly assigned third grade classroom teachers.

The experimental group subjects were taught by their regularly assigned third grade teachers, who with the support of their principal had volunteered to try the Word Attack element and the individualized instructional management approach of the Wisconsin Design for Reading Skills Development as a systematic planning and teaching model during the 1973-74 school year.

Two hundred and twenty subjects in the control group of this study were taken from 11 individual classrooms, in 7 different elementary buildings, and were not given special treatment by exposing them to one year of Wisconsin Reading Design treatment. There were 113 boys and 107 girls represented in the total, whose mean age was eight years old. The control group subjects were taught by 11 regularly assigned third grade classroom teachers.

It is important to note that as an ex-post fact study none of the pupils nor the teachers (1973-74) were aware at that time that their classrooms' reading achievement skills would be retrieved in the future from the pupils' cumulative records to become subjects in a dissertation study on the effects of the Wisconsin Design in reading comprehension, reading vocabulary and total reading skills achievement in 1975.

The schools involved in this study are predominantly white with a minority population of approximately 4 percent. The students are assigned to classes based on a heterogeneous grouping method. In the spring of 1973, the experimental program concept was presented to the third grade teachers who would work with the experimental group. The 14 experimental classes were selected from among the district's third grade teachers who expressed a desire to participate in the program. The 11 control classes were selected from within the district, and with equivalent socio-economic background.[4]

The 1973-74 subjects of this study total 505 third grade pupils, in 25 regular, self-contained classroom assignments found in 13 of the

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[4]John R. Heckerl, "Waterford School District Evaluation Report of an Instructional Management Model for the Improvement of Reading,"--A Michigan Department of Education Experimental and Demonstration Centers Program Title III, July 1974, pp. 6-7.

district's 27 elementary schools. This group was composed of 261 boys and 244 girls with the average ages for both boys and girls being eight years old. These subjects were to be named the total project group. The total project group, which included both the experimental and control groups, were not keenly aware that the experimental group were receiving some sort of special instruction which they could identify as the Wisconsin Design. However, in many ways it did not seem much different to the students involved than it was before in their language arts-reading instruction. The pupils were still being grouped for reading instruction, perhaps more often, and they were aware of taking many more tests prior to being assigned to instructional needs groups. These tests were the diagnostic pretests of the Wisconsin Tests of Reading Skills Development which helped assess instructional needs prior to the skills cycle being taught.

The Operation of the Program

The eleven control classes selected operated a traditional three groups, self-contained classroom reading program. No changes, suggestions, or recommendations were made or were suggested to the teachers involved with the control classes. Nor was there any attempt to influence their teaching in any way.

The fourteen experimental classes were taught by teachers who used the word-attack element of the Wisconsin Design for Reading Skills Development (WDRSD). Various meetings were conducted in order to explain and to plan the program in detail, and to enlist the aid and approval of both the staff and the parents.

The Wisconsin Design is primarily an instructional management

model in reading. It provides for an assessment of an individual student's reading skills, the means for teachers to constantly monitor the progress of their students, and a profile of skill attainment for each student. Instructionally, the Design provides the teacher with an extensive reading skills sequence, an index of materials to teach those skills, and criterion-referenced tests to evaluate skill attainment.

Forty hours of in-service sessions were scheduled initially to familiarize teachers with the Instructional Management System (WDRSD) concept. Audio-visual aids and simulation activities were employed. Teachers attending produced an average of 63 percent correct responses on the pretest of the Reading Instructional Management System (WDRSD) concepts. The post test average for this group was 80 percent correct responses. Included in the appendix is a copy of the in-service assessment measure to evaluate the sessions, and a copy of the workshop agenda.

Included in the appendix is a questionnaire which was completed by the teachers at all treatment schools at the end of the 1973-74 school year. In general, the teachers were positive about the program indicating that they were better teachers of reading and that their students had benefited.

Skill assessment was initiated in May, 1973 using the revised Wisconsin Tests of Reading Skill Development. Following scoring of the tests and completion of the pupil profile cards, teachers met in planning sessions to group students for skill instruction. Each skill group met for three weeks of instruction. At the end of this period, students were assessed on a particular skill to determine if that skill had been mastered (80 percent correct response was assumed to indicate

mastery). Skills were not taught during the week following the administering of the mastery test. This week was used by teachers for art or science activities, review of previously taught reading skills, or independent reading activities. During this week, teachers also met in planning sessions to regroup students for further skill instruction and to decide upon the materials to be used.

A variety of materials that were readily available to teachers was of great importance to the program. Rather than using a single workbook for teaching skills, teachers drew upon a variety of sources for teaching a specific skill. Many sources of materials were examined and appropriate pages or activities coded to a specific skill. When a teacher taught that skill, she could select the materials she wanted to use from an extensive skill resource file.

The following chronology of events (see Table 2) reports specific activities occurring in the operation of the program.

Instrumentation

The design of this study conforms to the Post Test Control Group Only Method. Therefore, data were utilized from the Comprehensive Test of Basic Skills which was routinely administered by classroom teachers in May 1974 to all pupils in third grade, according to the district's standardized test policy. The district's test policy was developed for the purpose of year-end evaluation. This investigator used only the reading section of this test. Raw scores in vocabulary, comprehension, and total reading were derived for each pupil. The data were analyzed by computer using a model for analysis of variance.

The Short Form Test of Academic Aptitude (1970 Norms) was administered during May 1974 to all students in both the control and the

TABLE 2

CHRONOLOGY OF MAJOR PROGRAM EVENTS

May 1973	Administer Wisconsin Design Tests to project schools
May 1973	Administer Gates-MacGinitie Tests to some project schools
June 1973	Initial in-service
August 1973	Hire aides, arrange room facilities, order materials
September 1973	Re-test where needed Prepare pupil profile cards and classroom charts Allocate time for daily skill development
October 1973	Parent meetings--all project schools Begin skill group instruction
December 1973	Dissemination--Lakeland Tribune Dissemination--Faculty Advisory Council Begin Advisory Council meetings
February 1974	Correlate reading model with district computer Assisted learning program Advisory Council
March 1974	Dissemination--Birmingham Schools Title III Project Directors meeting Advisory Council
April 1974	Begin preparing evaluation forms Advisory Council
May 1974	Gates-MacGinitie post testing some project schools State Validation--first visit
June 1974	Evaluation data to data processing
July 1974	Complete evaluation Make test revisions Add new materials State Validation--second visit

experimental groups. This test was chosen because it is used with intact classes. If there had been a significant difference between the treatment and control groups on this measure along with a correlation between aptitude and reading comprehension, then academic aptitude would have been used as a covariant. There was not a significant difference between the treatment and control groups on this measure; therefore, a one-way analysis of variance was conducted with the dependent variable.

Raw scores derived from the Short Form Test of Academic Aptitude were used to categorize subjects in both the treatment and control groups into high, middle, and low aptitude groupings. Those pupils placed in the high aptitude grouping had a raw score of sixty or above on the test. Those pupils placed in the middle aptitude groupings had a raw score of between forty and fifty-nine on the test. Those pupils placed in the low aptitude groupings had a raw score of between zero and thirty-nine. The mean scores on this measure for the Experimental and Control groups were 49.8 and 49.1 respectively.

Data were analyzed through the services of Systematic Studies Department, Oakland Schools, Pontiac, Michigan.

Instruments Used

Comprehensive Tests of Basic Skills

The Comprehensive Tests of Basic Skills are a series of tests with alternate forms for grades 2.5 through 12.0. The tests are published by the California Test Bureau, a division of McGraw-Hill Inc. They were standardized and have been in use since 1968. For the purpose of this study only the reading portion of the tests was used.

The tests were not intended to measure achievement in specific course content as reflected in textbooks for various grade levels. However, performance on these tests is necessarily dependent on the possession of relevant knowledge and is affected by the grade level at which the skill is first introduced. The tests were developed for national use by students who had been taught by different approaches. Test items should be answered as readily by students taught by a traditional approach as by those who were taught by any of the newer approaches.

The tests were standardized by using some 18,000 students from schools randomly selected from all regions and states of the United States. They were standardized after two experimental tryouts of the tests were conducted with groups of 8,000 and 10,000 students. Level 1 of the tests was used in this study as it was designed and normed to include students in grades 2.5 - 4.9.

The reading section of the tests consisted of two parts. The test was designed to obtain scores for vocabulary, comprehension, and total reading. The vocabulary section consisted of forty items. The students would choose from among four alternatives the word that had the best meaning for the underlined word used in context in the stem of the item. There were forty-five items in the comprehension section designed: (1) to measure the student's ability to recognize directly stated details; (2) to comprehend the meaning of ideas by simple rewording and paraphrasing; (3) to interpret what is read by identifying the main idea, perceiving relationships, drawing conclusions, and making inferences; and (4) to extend interpretation beyond stated

information. The test used such selections as stories, poems, and latters.[5]

There are three essential attributes of a good test: (1) standardization, (2) validity, and (3) reliability. The standardization of the Comprehensive Tests of Basic Skills was carefully developed as reported above. The reliability coefficient for this test was .81 using the Pearson product moment correlation, and the validity of this test ranges from .70 to .81.[6] More information regarding the Comprehensive Test of Basic Skills may be found in the Appendix.

Short Form Test of Academic Aptitude (SFTAA), 1970 Edition

The Short Form Test of Academic Aptitude (SFTAA) was developed as an instrument to assess the level of intellectual development attained by the student, and to predict his potential rate of progress and level of success in school. The test is the successor of the 1963 California Short-Form Test of Mental Maturity. The SFTAA includes four separately timed subtests which measure vocabulary development (Vocabulary), Logical reasoning (Analogies), quantitative relations (Sequences), and meaningful memory (Memory). Vocabulary and Memory constitute the language section; Analogies and Sequences make up the Non-Language section.

Reliability: Estimates were computed for each grade, level, and sub-score using three different methods--internal consistency (KR20), Interlevel articulation (correlations between scores on two levels of the test administered to the same grade level), and test-retest. These ranged from .65 to .96; .77 to .89; and from .82 to .96 respectively.

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[5]California Test Bureau. Comprehensive Tests of Basic Skills, Technical Manual. (Monterey California: McGraw-Hill Book Company, 1968).

[6]Ibid.

Validity: Language--Non-language correlations ranged from .51 to .66 which suggests that the two sub-scales each measure aspects (although somewhat different) of academic aptitude. The Technical Bulletin also reports the relationship between SFTAA Scores and California Achievement Tests scores. The two total batteries correlated as follows for third grade.[7]

	SFTAA	CAT-70	.86	(Grade 3)
Level	2	2		

More detailed information related to this test may be found in the appendix.

Gates-MacGinitie Reading Tests

Gates-MacGinitie Reading Tests were administered to all third grade students at three of the treatment schools and one control school. The results of this testing will be given for reporting purposes only in Chapter V of this study.

The Gates-MacGinitie Reading Tests, Survey C was used. This test is part of a new series of tests designed to cover grades one through twelve. Survey C was designed for pupils in grades 2.5 - 4.5. The tests were published in 1965.

Some 40,000 pupils were selected to establish norms from thirty-eight communities which were selected on the basis of size, geographical location, average educational level, and average family income.

Reliability: Alternate form reliability coefficients are reported in the Technical Manual, ranging from .67 to .89 for Level C. The range on Level C is as follows: (.67 - .89).

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[7]Testing Catalog (1974-1975), Oakland Schools, 2100 Pontiac Lake Road, Pontiac, Michigan, pp. 40-41.

Validity: Validity coefficients ranged from a low of .60 to a high of .77.[8]

More detailed information regarding this test may be found in the appendix.

The Wisconsin Tests of Reading Skills Development

The Wisconsin Tests of Reading Skills Development, Word Attack pre-test and post-test instruments, forms p and q, the 1972 edition, are criterion referenced with a mastery level of 80 percent suggested, a reliability coefficient of over .80. There are four levels of tests that range through the grades one through four. Levels A, B, and C correspond to grades one through three. Level D is generally used in grades four and above. Level A has four clusters of word attack skills with several sequences for each cluster. Level B has four clusters with ten skills sequences. Level C has six clusters with eight skill sequences and Level D has three clusters with six skill sequences. (See Appendix for the scope and sequence of skills objectives contained in the Word Attack element of the WDRSD). Some test results will be given in Chapter V related to The Wisconsin Tests of Reading Skills Development and will be included by this investigator for reporting purposes only, primarily to give the reader a better understanding of The Wisconsin Design for Reading Skills Development.

Statement of Hypotheses in Null Form

Hypothesis 1: There is no significant difference in reading comprehension between pupils in the WDRSD group and pupils in the Control

[8]Arthur I. Gates and Walter H. MacGinitie, Gates MacGinitie Reading Tests Technical Manual (New York: Teachers College Press, 1965).

group as measured by the CTBS reading comprehension subtest.

Symbolically H_0: $Mw = Mc$

H_1: $Mw \neq Mc$

where Mw and Mc are the mean scores on the CTBS reading comprehension subtest attained by the WDRSD group and the Control group respectively.

Hypothesis 2: There is no significant difference in reading comprehension between high aptitude pupils in the WDRSD group and corresponding high aptitude pupils in the Control group.

Symbolically H_0: $Mwh - Mch$

H_1: $Mwh \neq Mch$

where Mwh and Mch are the mean scores on the CTBS reading comprehension subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 3: There is no significant difference in reading comprehension between middle aptitude pupils in the WDRSD group and corresponding middle aptitude pupils in the Control group.

Symbolically H_0: $Mwm = Mcm$

H_1: $Mwm \neq Mcm$

where Mwm and Mcm are the mean scores on the CTBS reading comprehension subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 4: There is no significant difference in reading comprehension between low aptitude pupils in the WDRSD group and in the corresponding low aptitude pupils in the Control group.

Symbolically H_0: Mwl = Mcl

H_1: Mwl ≠ Mcl

where Mwl and Mcl are the mean scores on the CTBS reading comprehension subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 5: There is no significant difference in reading vocabulary between pupils in the WDRSD group and pupils in the Control group as measured by the CTBS reading vocabulary subtest.

Symbolically H_0: Mw = Mc

H_1: Mw ≠ Mc

where Mw and Mc are the mean scores on the CTBS reading vocabulary subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 6: There is no significant difference in reading vocabulary between high aptitude pupils in the WDRSD group and pupils in the corresponding high aptitude Control group.

Symbolically H_0: Mwh = Mch

H_1: Mwh ≠ Mch

where Mwh and Mch are the mean scores on the CTBS reading vocabulary subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 7: There is no significant difference in reading vocabulary between middle aptitude pupils in the WDRSD group and pupils in the corresponding middle aptitude Control group.

Symbolically H_0: Mwm = Mcm

H_1: Mwm ≠ Mcm

where Mwm and Mcm are the mean scores on the CTBS reading vocabulary subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 8: There is no significant difference in total reading between low aptitude pupils in the WDRSD treatment group and pupils in the corresponding low aptitude Control group.

Symbolically H_0: Mwl = Mcl

H_1: Mwl ≠ Mcl

where Mwl and Mcl are the mean scores on the CTBS reading vocabulary subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 9: There is no significant difference in total reading between pupils in the WDRSD group and pupils in the Control group as measured by the CTBS total reading subtest.

Symbolically H_0: Mw = Mc

H_1: Mw ≠ Mc

where Mw and Mc are the mean scores on the CTBS total reading subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 10: There is no significant difference in total reading between high aptitude pupils in the WDRSD group and pupils in the corresponding high aptitude Control group.

Symbolically H_0: Mwh = Mch

H_1: Mwh ≠ Mch

where Mwh and Mch are the mean scores on the CTBS total reading subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 11: There is no significant difference in total reading between middle aptitude pupils in the WDRSD group and pupils in the corresponding middle aptitude Control group.

Symbolically H_0: Mwm = Mcm

H_1: Mwm ≠ Mcm

where Mwm and Mcm are the mean scores on the CTBS total reading subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 12: There is no significant difference in total reading between low aptitude pupils in the WDRSD group and pupils in the corresponding low aptitude Control group.

Symbolically H_0: Mwl = Mcl

H_1: Mwl ≠ Mcl

where Mwl and Mcl are the mean scores on the CTBS total reading subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 13: There is no significant difference in reading comprehension between male pupils in the WDRSD group and male pupils in the corresponding Control group.

Symbolically H_0: Mwm = Mcm

H_1: Mwm ≠ Mcm

where Mwm and Mcm are the mean scores on the CTBS reading comprehension subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 14: There is no significant difference in reading comprehension between female pupils in the WDRSD group and female pupils in the corresponding Control group.

Symbolically H_0: Mwf = Mcf

H_1: Mwf ≠ Mcf

where Mwf and Mcf are the mean scores on the CTBS reading comprehension subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 15: There is no significant difference in reading comprehension between male pupils in the WDRSD group and female pupils in the WDRSD group.

Symbolically H_0: Mwm = Mwf

H_1: Mwm ≠ Mwf

where Mwm and Mwf are the mean scores on the CTBS reading comprehension subtest attained by the WDRSD male treatment group and the female WDRSD treatment group respectively.

Hypothesis 16: There is no significant difference in reading vocabulary between male pupils in the WDRSD group and male pupils in the corresponding Control group.

Symbolically H_0: Mwm = Mcm

H_1: Mwm ≠ Mcm

where Mwm and Mcm are the mean scores on the CTBS reading vocabulary subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 17: There is no significant difference in reading vocabulary between female pupils in the WDRSD group and female pupils in the corresponding Control group.

Symbolically H_0: Mwf = Mcf

H_1: Mwf ≠ Mcf

where Mwf and Mcf are the mean scores onthe CTBS reading vocabulary subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 18: There is no significant difference in reading vocabulary between male pupils in the WDRSD group and female pupils in the WDRSD treatment group.

Symbolically H_0: Mwm = Mwf

H_1: Mwm ≠ Mwf

where Mwm and Mwf are the mean scores on the CTBS reading vocabulary subtest attained by the WDRSD male treatment group and the female WDRSD treatment group respectively.

Hypothesis 19: There is no significant difference in total reading between male pupils in the WDRSD group and male pupils in the corresponding Control group.

Symbolically H_0: Mwm = Mcm

H_1: Mwm ≠ Mcm

where Mwm and Mcm are the mean scores on the CTBS total reading subtest attained by the WDRSD treatment group and Control group respectively.

Hypothesis 20: There is no significant difference in total reading between female pupils in the WDRSD group and female pupils in the corresponding Control group.

Symbolically H_0: Mwf = Mcf

H_1: Mwf ≠ Mcf

where Mwf and Mcf are the mean scores on the CTBS total reading subtest attained by the WDRSD treatment group respectively.

Hypothesis 21: There is no significant difference in total reading between male pupils in the WDRSD group and female pupils in the WDRSD treatment group.

Symbolically H_0: Mwm = Mwf

H_1: Mwm ≠ Mwf

where Mwm and Mwf are the mean scores on the CTBS total reading subtest attained by the WDRSD male treatment group and the female WDRSD treatment group respectively.

CHAPTER IV

ANALYSIS OF RESULTS

The purpose of this study was to determine if there was a significant difference in reading achievement between students in an Instructional Management Reading Systems Program and students in a traditional reading program. This part of the study identifies and describes the effects of the Word Attack element of the Wisconsin Design treatment during the 1973-74 school year on an experimental group of 285 third grade subjects.

Of particular interest to the investigator are the relationships and changes stated in the three general hypotheses presented in Chapter I. In this chapter the general hypotheses have been restated in statistical testable form.

Hypotheses one through twelve compare the experimental and control groups with group aptitude and aptitude subgroups in terms of reading comprehension, reading vocabulary and total reading achievement. Hypotheses thirteen through twenty-one compare the experimental and control groups with sex subgroups in terms of reading comprehension, reading vocabulary and total reading achievement. Reference tables are provided to supply data for acceptance or rejection of the statistically testable null hypotheses presented based on the .05 level of confidence. The reference tables were developed and arranged to furnish the reader with data related to the hypotheses advanced previous

to the reference table submitted. Statistically testable hypotheses and their respective reference tables are coordinated with major concerns expressed in the three general hypotheses stated in Chapter I and are restated here for reader convenience.

1. There are no differences in reading comprehension, reading vocabulary or total reading achievement resulting from the use of the Wisconsin Design for Reading Skill Development. (WDRSD)
2. There are no differences in reading comprehension, reading vocabulary or total reading achievement between high, middle, and low aptitude student subgroups resulting from the use of the Wisconsin Design for Reading Skill Development. (WDRSD)
3. There are no differences in reading comprehension, reading vocabulary or total reading achievement between male and female student subgroups resulting from the use of the Wisconsin Design for Reading Skill Development. (WDRSD)

The testable hypotheses presented generally compare reading achievement between the treatment group and the corresponding non-treatment control group. However, hypotheses fifteen, eighteen, and twenty-one compare the male treatment group with the female treatment group. The data used for testing hypotheses one through twenty-one are the raw scores on the CTBS reading subtest, which are normative referenced.

The order of presentation for this chapter will be to restate the testable hypotheses, to cite the data, to state whether the hypotheses are accepted or rejected.

Test of Hypothesis 1: The F-value derived from the analysis of variance was .11 and thus there was no significant difference between the means for the WDRSD and Control groups. Therefore, the null hypothesis was not rejected and the alternate hypothesis was not accepted.

Symbolically H_0: Mw = Mc

Test of Hypotheses 2, 3, and 4: There was no significant difference between the reading comprehension scores attained by the high, middle, and low WDRSD aptitude subgroups and the corresponding high, middle, and low aptitude Control subgroups. Therefore, the null hypotheses 2, 3, and 4 are not rejected and the corresponding alternate hypotheses cannot be accepted.

Symbolically H_0: Mwh = Mch

H_0: Mwm = Mcm

H_0: Mwl = Mcl

Table 3 provides data to compare the means and standard deviations of the treatment group (WDRSD) with the corresponding Control group. Included in this table is the F-value derived from a one-way analysis of variance with reading comprehension as the dependent variable. Finally, Table 3 provides data to compare means and standard deviations between high, middle, and low aptitude subgroups of the treatment group (WDRSD) and the corresponding Control group.

TABLE 3

MEANS AND STANDARD DEVIATIONS OF WDRSD GROUP AND CONTROL GROUP BY APTITUDE SUBGROUPS ON COMPREHENSION SUBTEST, CTBS

	WDRSD Group	Control Group
Means	26.1	25.1
Standard Deviation	11.8	12.1

F = .11 NS

Aptitude Subgroups	WDRSD Group		Control Group	
	Means	Standard Deviation	Means	Standard Deviation
High	37.6	4.8	37.2	6.7
N	39		22	
Middle	26.1	11.4	25.5	11.8
N	212		163	
Low	13.3	5.5	15.6	9.4
N	34		35	

Test of Hypothesis 5: The F-value derived from the analysis of variance was .006 and thus there was no significant difference between the means for the WDRSD and Control groups. Therefore, the null hypothesis was not rejected and the alternate hypothesis was not accepted.

Symbolically H_0: Mw = Mc

Test of Hypotheses 6, 7, and 8: There were no significant differences between the vocabulary scores attained by the high, middle, and low aptitude Control subgroups. Therefore, the null hypotheses 6, 7, and 8 are not rejected and the corresponding alternate hypotheses cannot be accepted.

Symbolically H_0: Mwh = Mch

H_0: Mwm = Mcm

H_0: Mwl = Mcl

Table 4 provides data to compare the means and standard deviations of the treatment group (WDRSD) with the corresponding Control group. Included in this table is the F-value derived from a one-way analysis of variance with reading vocabulary as the dependent variable. Finally, Table 4 provides data to compare means and standard deviations between high, middle, and low aptitude subgroups of the treatment group (WDRSD) and the corresponding Control group.

TABLE 4

MEANS AND STANDARD DEVIATIONS OF WDRSD GROUP AND CONTROL GROUP SCORES BY APTITUDE SUBGROUPS ON VOCABULARY SUBTEST, CTBS

	WDRSD Group	Control Group
Means	23.5	23.6
Standard Deviation	9.2	10.8

F = .006 NS

Aptitude Subgroups	WDRSD Group		Control Group	
	Means	Standard Deviation	Means	Standard Deviation
High	32.41	3.7	33.1	4.2
N	39		22	
Middle	23.5	8.7	24.1	10.8
N	212		163	
Low	13.6	6.4	15.0	8.5
N	34		35	

Test of Hypothesis 9: The F-value derived from the analysis of variance was .14 and thus there was no significant difference between the means for the WDRSD and Control groups. Therefore, the null hypothesis was not rejected and the alternate hypothesis was not accepted.

Symbolically H_0: Mw = Mc

Test of Hypotheses 10, 11, and 12: There were no significant differences between total reading scores attained by the high, middle, and low WDRSD aptitude subgroups and the corresponding high, middle, and low aptitude Control subgroups. Therefore, the null hypotheses 10, 11, and 12 are not rejected and the corresponding alternate hypotheses cannot be accepted.

Symbolically H_0: Mwh = Mch

H_0: Mwm = Mcm

H_0: Mwl = Mcl

Table 5 provides data to compare the means and standard deviations of the treatment group (WDRSD) with the corresponding Control group. Included in this table is the F-value derived from a one-way analysis of variance with Total reading as the dependent variable. Finally, Table 5 provides data to compare means and standard deviations between high, middle, and low aptitude subgroups of the treatment group (WDRSD) and the corresponding Control group.

TABLE 5

MEANS AND STANDARD DEVIATIONS OF WDRSD GROUP AND CONTROL GROUP SCORES BY APTITUDE SUBGROUPS ON TOTAL READING SUBTEST, CTBS

	WDRSD Group	Control Group
Means	48.6	48.4
Standard Deviation	18.4	20.6

F = .14

Aptitude Subgroups	WDRSD Group		Control Group	
	Means	Standard Deviation	Means	Standard Deviation
High	66.4	13.1	70.6	9.9
N	39		22	
Middle	48.7	16.7	48.5	19.4
N	212		163	
Low	26.9	11.0	30.5	17.6
N	34		35	

Test of Hypotheses 13 and 14: The derived F-value for the analysis of variance was .77 and thus there was no significant difference between the mean scores for reading comprehension attained by WDRSD males and females and the corresponding males and females of the Control group. Therefore, the null hypotheses 13 and 14 are not rejected and the corresponding alternate hypotheses cannot be accepted.

Symbolically H_0: Mwm = Mcm

H_0: Mwf = Mcf

Test of Hypothesis 15: The derived F-value for the analysis of variance was 20.9 and thus there was a significant difference between the mean scores for reading comprehension attained by WDRSD males and the mean scores attained by WDRSD females. Therefore, the null hypothesis 15 is rejected and the corresponding alternate hypothesis is accepted.

Symbolically H_1: Mwm $\neq$ Mwf

There is a significant difference between the mean scores by sex on the comprehension subtest at the .001 level. Further analysis using the t-test showed the mean score for females in the WDRSD group to be superior to the mean score for males in the WDRSD group at the .05 level.

Table 6 provides data to compare the means and standard deviations of the treatment group (WDRSD) with the corresponding Control group. This table also provides data to compare male and female subgroup means and standard deviations within the treatment group (WDRSD). This table includes the treatment F-value, the sex F-value and the interaction F-value which are derived from a one-way analysis of variance with reading comprehension as the dependent variable.

TABLE 6

MEANS AND STANDARD DEVIATIONS OF WDRSD GROUP AND CONTROL GROUP SCORES BY SEX GROUPING ON COMPREHENSION SUBTEST, CTBS

	WDRSD Group		Control Group		
	Means	Standard Deviation	Means	Standard Deviation	Means Total
Male	24.0	10.8	22.6	12.4	23.4
N	148		113		
					Sex F = 20.9**
Female	28.4	12.6	28.0	11.2	28.2
N	137		107		
Means Total	26.2	11.8			

Treatment F = .77 NS

Interaction F = .32 NS

**Significant at the .001 level

Test of Hypotheses 16 and 17: The derived F-value for the analysis of variance was .08 and thus there was no significant difference between the mean scores for reading vocabulary attained by WDRSD males and females and the corresponding males and females of the Control group. Therefore, the null hypotheses 16 and 17 are not rejected and the corresponding alternate hypotheses cannot be accepted.

Symbolically H_0: Mwm = Mcm

H_0: Mwf = Mcf

Test of Hypothesis 18: The derived F-value for the analysis of variance was 12.0 and thus there was a significant difference between the mean scores for reading vocabulary attained by WDRSD males and the mean scores attained by WDRSD females. Therefore, the null hypothesis 18 is rejected and the corresponding alternate hypothesis is accepted.

Symbolically H_1: Mwm ≠ Mwf

There is a significant difference between the mean scores by sex on the reading vocabulary subtest of the .001 level. Further analysis using the t-test showed the mean score for females in the WDRSD group to be superior to the mean score for males in the WDRSD group at the .05 level.

Table 7 provides data to compare the means and standard deviations of the treatment group (WDRSD) with the corresponding Control group. The table also provides data to compare male and female subgroup means and standard deviations within the treatment group (WDRSD). This table includes the treatment F-value, the sex F-value and the interaction F-value, which are derived from a one-way analysis of variance with reading vocabulary as the dependent variable.

TABLE 7

MEANS AND STANDARD DEVIATIONS OF WDRSD GROUP AND CONTROL GROUP SCORES BY SEX GROUPING ON VOCABULARY SUBTEST, CTBS

	WDRSD Group		Control Group		
	Means	Standard Deviation	Means	Standard Deviation	Means Total
Male	22.7	8.9	21.5	10.0	22.2
N	148		113		
					Sex F = 12.0**
Female	28.4	12.6	28.0	11.2	28.2
N	137		107		
Means Total	23.5	9.2			

Treatment F = .08 NS

Interaction F = 2.5 NS

**Significant at the .001 level

Test of Hypotheses 19 and 20: The derived F-value for the analysis of variance was .01 and thus there was no significant difference between the mean scores for total reading attained by WDRSD males and females and the corresponding males and females of the Control group. Therefore, the null hypotheses 19 and 20 are not rejected and the corresponding alternate hypotheses cannot be accepted.

Symbolically H_0: Mwm = Mcm

H_0: Mwf = Mcf

Test of Hypothesis 21: The derived F-value for the analysis of variance was 18.3 and thus there was a significant difference between the mean scores for total reading attained by WDRSD males and the mean scores attained by WDRSD females. Therefore, the null hypothesis 21 is rejected and the corresponding alternate hypothesis is accepted.

Symbolically H_1: Mwm $\neq$ Mwf

There is a significant difference between the mean scores by sex on the total reading subtest at the .001 level. Further analysis using the t-test showed the mean score for females in the WDRSD group to be superior to the mean score for males in the WDRSD group at the .05 level.

Table 8 provides data to compare the means and standard deviations of the treatment group (WDRSD) with the corresponding Control group. The table also provides data to compare male and female subgroup means and standard deviations within the treatment group (WDRSD). This table includes the treatment F-value, the sex F-value and the interaction F-value which are derived from a one-way analysis of variance with total reading as the dependent variable.

TABLE 8

MEANS AND STANDARD DEVIATIONS OF WDRSD GROUP AND CONTROL GROUP SCORES BY SEX GROUPING ON TOTAL READING SUBTEST, CTBS

	WDRSD Group		Control Group		
	Means	Standard Deviation	Means	Standard Deviation	Means Total
Male	45.8	18.7	43.7	22.2	44.9
N	148		113		
					Sex F = 18.3**
Female	51.5	18.0	53.1	17.8	52.2
N	137		107		
Means Total	48.5	18.4			

Treatment F = .0 NS

Interaction F = 1.2 NS

**Significant at the .001 level

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS AND DISCUSSION

The main purposes of this chapter were: (1) to report the findings of the study, (2) to summarize the conclusions based on the analysis of the data, and (3) discussion which will include a review and possible explanation for the findings and results of the study. The chapter was organized by: (1) a restatement of the purpose, (2) a review of the general hypotheses, (3) the delimitations of the study, (4) a summation of the literature, (5) a review of the research design, (6) a report of the findings, (7) a statement of the conclusions, and (8) a listing of the recommendations.

Summary

Purpose

The primary purpose of this study was to determine if there was a significant difference in growth in reading achievement between students who were engaged in an Instructional Management Reading System Program and students who were engaged in a traditional classroom reading program. A secondary purpose was to determine the differences and/or similarities between high, middle, and low aptitude student subgroups within the treatment group. It was also a secondary purpose to determine the difference and/or similarities of male and female subgroups within the treatment group.

Information is limited in terms of general educational outcomes of the Wisconsin Design for Reading Skills Development throughout the United States. Only limited outcome data were available concerning the Design. This was one reason the present investigation was undertaken. This investigator could not ascertain at this time whether this situation existed because of the relative recency of the research, or the lengthy development and evaluation phases of the field testing.

Hypotheses

1. There are no differences in reading comprehension, reading vocabulary or total reading achievement resulting from the use of the Wisconsin Design for Reading Skill Development. (WDRSD)
2. There are no differences in reading comprehension, reading vocabulary or total reading achievement, between high, middle, and low aptitude student subgroups resulting from the use of the Wisconsin Design for Reading Skill Development. (WDRSD)
3. There are no differences in reading comprehension, reading vocabulary or total reading achievement between male and female student subgroups resulting from the use of the Wisconsin Design for Reading Skill Development. (WDRSD)

Delimitations

To accomplish the objectives of this study the experimental group was limited to 285 third grade students from six Waterford elementary schools who received the WDRSD treatment. The Control group was limited to 220 third grade students from seven Waterford elementary schools who

did not receive WDRSD treatment. All schools are located in the Waterford School District, Waterford, Michigan.

It was also limited to experimental and control classrooms during the 1973-74 school year.

The Literature

A review of the literature indicated that there is a history that depicts the need for change in education in general, and reading in particular. A rapid acceleration in the rate of change has occurred in the last decade; however, many of these changes were not grounded in good scientific experimentation.

Many writers indicated that an effective reading program for pupils must be individualized, and that the individual pupil is entitled to work at the level, rate and learning style that he can function best according to his unique characteristics. Reading, as a key to learning, must be geared to the needs of the pupil rather than to the system.

References consulted indicated the important role that diagnosis and prescription plays in reading. Many pupils were placed in reading situations that were not appropriate to their reading level or to their needs. Instruction should begin where the child is capable of learning at the optimum for that given child.

There was much disagreement among the writers as to what methods or approaches to reading and to change are desirable, but there was almost complete agreement that what has been must change. Some references indicated that meaningful change in the teaching of reading could be introduced by employing Instructional Management Systems such as the Wisconsin Design for Reading Skill Development.

A Review of the Research Design

The dependent variables in this study were reading comprehension, reading vocabulary, and total reading as measured by the corresponding sub-tests of the Comprehension Test of Basic Skills, Form S, 1973. Since intact classes were used, academic aptitude, as measured by the Short Form Test of Academic Aptitude, were analyzed. If there had been a significant difference between the treatment and control groups on this measure along with a correlation between aptitude and the dependent variables, then academic aptitude would have been used as a covariant. There was not a significant difference between the treatment and control groups on this measure; therefore, a one-way analysis of variance was conducted with the dependent variables. Data were analyzed through the services of the Systematic Studies Department, Oakland Schools, Pontiac, Michigan.

A Report of the Findings

Statistical hypotheses (except for hypotheses fifteen, eighteen, and twenty-one) tested the effects of the Wisconsin Design Treatment (WDRSD) for reading comprehension, reading vocabulary, and total reading were measured by the CTBS reading sub-test. These effects on achievement were compared to a corresponding non-treatment control group. The tests of hypotheses one through twenty-one (except for hypotheses fifteen, eighteen, and twenty-one relating to male/female reading differences) indicated that there was no significant difference at the .05 level in reading comprehension, reading vocabulary, and total reading achievement between the Wisconsin Design Treatment group and the corresponding Control group as measured by the CTBS reading sub-test.

Hypotheses fifteen, eighteen, and twenty-one tested the effects of the Wisconsin Design Treatment (WDRSD) between male and female sub-groups for reading comprehension, reading vocabulary, and total reading achievement as measured by the CTBS reading sub-test. The tests of hypotheses fifteen, eighteen, and twenty-one indicated that there was a significant difference between the male and female sub-groups of the treatment group. It should also be noted that there was a corresponding significant difference between male and female sub-groups of the control group with females performing at a higher level on these test measures.

The Gates-MacGinitie Reading Tests of Vocabulary and Comprehension were administered to third grade students at three of the treatment schools and at a control school in May, 1973 and May, 1974. Table 9 reports the mean pre-test and post-test grade scores in vocabulary and comprehension by grade level placement of the students at the four schools.

The data indicates that performance of treatment school students and control students appear to be quite similar on the vocabulary and comprehension sub-tests of the Gates-MacGinitie. These findings are in agreement with results described earlier in this study using the CTBS and have been included in this chapter for reporting purposes only.

As mentioned previously in this study the Wisconsin Tests were administered initially as a battery of tests to ascertain those word attack skills which had been mastered and the skill level at which the student should be instructed. Following each instructional phase, a test or tests covering the skills taught during that phase was administered. Mastery of that skill or skills was assumed to have occurred when the student achieved 80 percent or better on the test.

TABLE 9

MEAN PRE-TEST AND POST-TEST READING VOCABULARY AND COMPREHENSION SCORES (G.E.U.) FOR THIRD GRADE TREATMENT (WDRSD) AND CONTROL GROUPS 1973-74

	Vocabulary					
	Pre-Test			Post-Test		
	N	M	SD	N	M	SD
Cherokee Hills	18	3.68	1.25	20	4.70	1.55
Covert	27	2.79	1.11	30	3.58	1.04
Williams Lake	52	3.12	1.08	63	3.91	1.27
Control	27	3.07	1.06	33	4.22	1.35
	Comprehension					
	Pre-test			Post-Test		
	N	M	SD	N	M	SD
Cherokee Hills	18	3.67	1.19	20	4.68	1.41
Covert	27	2.64	1.03	30	3.33	1.06
Williams Lake	52	2.84	1.06	63	3.76	1.21
Control	27	2.72	1.08	33	3.92	1.31

Table 10 gives the average number of skills four treatment schools students had mastered on the initial administration of the Wisconsin Tests and the number of new skills mastered during the project. This data is included in this chapter for reporting purposes only.

Advocates of the Wisconsin Design assume that the Wisconsin Tests of Reading Skill Development provided for measuring attainment of objectives are valid indices of the skills taught. Based on this assumption

it can be demonstrated that treatment students have made substantial gains related to mastering specific word attack skills as indicated below. This was a most encouraging outcome for the Wisconsin Design Treatment as an individualized instructional management system. The results should have implications of similar expectation for populations, grade level, locales and settings comparable to those of Waterford School District.

TABLE 10

AVERAGE NUMBER OF WORD ATTACK SKILLS
ACQUIRED BY THIRD GRADE STUDENTS
DURING 1973-74

	Word Attack Skill Level*		
	Entry Skills	Final Skills	Gain
Covert	23.20	28.67	5.47
Williams Lake	19.35	34.49	15.14
Cherokee Hills	22.70	33.19	10.49
Schoolcraft	25.84	34.76	8.92

*Explanation: Criterion-referenced tests were administered prior to a student's receiving instruction. The Wisconsin tests of reading skill development are divided into four levels from A to D. While grade levels are ignored, Level A contains skills associated with kindergarten and first grade; while level D contains skills usually taught at third and fourth grades. A student works at skills on his level until he achieves mastery of all or all but one. Mastery of a skill is assumed when the student achieves at an 80 percent level on the criterion referenced test for that skill which is administered following the instructional period. Table 10 indicates the levels at which students began working at the beginning of the program and the levels to which they progressed during the year.

Discussion and Conclusions

Perhaps the recent development of Instructional Management Systems is related to the public demand for accountability. From my perception the increased educational costs have been reflected in public demand for accountability in education. Some educators have suggested that an Instructional Management System provides an accountability scheme that is preferable to some alternative scheme. That the concept of accountability in education seems to be gaining in popularity is in itself no valid reason to introduce an Instructional Management System. However, accountability seems to be a part of the future of schools and teachers. Instructional Management Systems may become a more common approach to the teaching of reading if public demand for accountability grows, because progress can be reported in a more specific and meaningful way (for example, progress made on specific skills is checked off on the report cards sent home to parents).

From my perception it seems possible that some educators have advanced the concept of Instructional Management Systems as a teaching vehicle to meet the rather stringent state and federal accountability requirements.

The commercially available Instructional Management Systems and the locally developed systems with which this investigator is familiar show these components: (1) a sequentially ordered set of behavioral objectives for the various skills (reading) monitored by the system, (2) a set of sub-tests (or of test items) with one or more items designed to measure each objective, (3) a rule or set of rules for deciding what level of achievement constitutes mastery of each objective, (4) a resource file listing specific workbook pages, ditto

masters, games or kits and (hopefully) teaching strategies which teachers can use to provide instruction and practice for children who have failed to attain mastery of specific objectives, and (5) a method of reporting to teachers which students have or have not mastered which skills.

The tests of hypotheses showed no significant difference in reading comprehension, reading vocabulary and total reading achievement between the Wisconsin Design treatment group and the control group after one year of using one element of the WDRSD. Similarly, the tests of hypotheses also indicated no significant difference in reading comprehension, reading vocabulary and total reading achievement between high, middle and low aptitude pupils of the Wisconsin Design treatment group and the corresponding control group. In both the experimental and the control groups, female subgroups surpassed their male counterparts. From my perception this significant difference should be a subject of future research. The word-attack element can be expected to attain the pre-established criteria of reading skills achievement and has been demonstrated in the study for reporting purposes.

This investigator concludes that performance of subjects enrolled in the program (treatment group) on reading comprehension, reading vocabulary and total reading as measured by the CTBS reading subtest were not significantly different from the corresponding control group. This investigator concludes that results of the study indicates the WDRSD treatment apparently has neither a positive nor a negative influence on the reading progress rates of the participants. These results may be attributable to a conversion from a general word recognition teaching

technique to a phonic approach and emphasis on word attack skills rather than on comprehension. The results of this research do not condemn WDRSD or Instructional Management Systems but do raise some questions about effectiveness and efficiency of such approaches which require further research. This investigator refers the reader to the review of literature, Chapter II, where advantages and disadvantages of such systems are presented.

From my perception it is rather doubtful that any one best method or product approach of instruction will be found or developed. It is highly likely some "superior" methods will be developed for specific outcomes, for certain personnel, for certain populations, or for cost benefit factors. This concept was discussed recently by Hull[1] in the November, 1973 Phi Delta Kappan. In his writing certain criteria were presented for selecting and deciding on individualized instructional approaches to fit explicit local needs.

Recommendations

Educational research generally reflects the notion that the teacher is the most important variable related to pupil outcomes in successes or failures on programs or materials used. If a school district were to implement the Wisconsin Design for Reading Skill Development I would recommend that the district's administration prepare for considerable staff planning, in-service education and commitment to the development of an Instructional Management System. It should be noted that the Wisconsin Design for Reading Skill Development as an

[1]Roland E. Hull, "Selecting an Approach to Individualized Instruction," Phi Delta Kappan 55 (November 1973).

Instructional Management System is unique and a school district must meet the unique requirements of the developers of this system. Staff cannot be trained nor can materials be purchased until a local facilitator or team is identified and sent to either Madison, Wisconsin (University of Wisconsin Research and Development Center for Cognitive Learning) or to the Institute for Development of Educational Activities (Kettering Foundation) in Dayton, Ohio. After an intensive training session the facilitator or team returns to the local district and provides system design orientation for the local administration, Board of Education, instructional staff and support staff. If the district chooses to adopt and implement the Wisconsin Design, after this overview and orientation to the goals, purposes, procedures, and functions of the Design, then a written agreement is entered into between the local district and the product research developer. At this point a local district may purchase the packaged materials needed to implement the Design and more comprehensively educate the instructional and support staff in the use of the Instructional Management System.

From my perception a school district would be wise to first obtain volunteer pilot instructional and support staffs with the corresponding classrooms prior to district adoption and implementation of the Design. It is further recommended that attitude surveys be given to pilot project students, parents, instructional staff and support staff to help determine if an enthusiastic educational environment exists for the development of the Instructional Management System.

A concluding recommendation would be that a longitudinal study be made, over a number of years if a district adopts the Wisconsin

Design as an Instructional Management System to determine if pupil reading vocabulary, reading comprehension, and total reading achievement will be significantly affected by extended use of the Wisconsin Design that would include all six elements (Word Attack, Study Skills, Comprehension, Self-Directed Reading, Interpretive Reading and Creative Reading). Educators at all levels ought to be actively involved in conducting this research.

APPENDICES

APPENDIX A

TEST INSTRUMENTS

Test Title: COMPREHENSIVE TESTS OF BASIC SKILLS (CTBS)
1973 Edition, Form S

Package Price: .93 per student

Publisher: CTB/McGraw-Hill

Type of Test: Achievement

Level:	Total Test Time:
Level 1 (Grades 2.5 - 4.9)	4 hrs. 28 minutes
Level 2 (Grades 4.5 - 6.9)	4 hrs. 23 minutes
Level 3 (Grades 6.5 - 8.9)	4 hrs. 22 minutes
Level 4 (Grades 8.5 - 12.9)	4 hrs. 15 minutes

Sub-Scores:

Reading - Vocabulary
Reading - Comprehension
Reading - Total
Language - Spelling
Language - Mechanics
Language - Expression
Language - Total
Mathematics - Computation
Mathematics - Concepts
Mathematics - Applications
Mathematics - Total
Reference Skills
Science
Social Studies
Total Battery

Description:

The Comprehensive Tests of Basic Skills (CTBS) battery is an achievement test battery consisting of tests in three basic skills areas: Reading, Language, and Mathematics. Three additional tests are also included in the battery, but are not included in the Total Battery score. These tests are Reference Skills, Science, and Social Studies. The emphasis in this series is on the measurement of the grasp of broad concepts and abstractions. Form S primarily differs from previous editions in the addition of two new tests, Science and Social Studies, which eliminated the need for the Graphic Materials test. The various intellectual processes and content tested are shown in a breakdown of the items which can be used in determining if the test is directly related to the school's educational objectives.

Reliability:

Preliminary reports from the publisher contain Kuder Richardson reliability coefficients for Form S of the CTBS by grade, level, and subtest. The ranges of these reliability estimates are as follows:

Level 1 (.76 - .99)
Level 2 (.79 - .98)
Level 3 (.76 - .99)
Level 4 (.74 - .98)

Validity:

The Test Coordinator's Handbook suggests that content validity should be the primary concern of users of the CTBS. In order to facilitate decisions concerning the correspondence between items in the CTBS and the content and processes of local curricula, item classification tables are presented in the Handbook. The publisher also assures his user that all items are carefully constructed to conform with current rules for item writing.

Test Title: SHORT FORM TEST OF ACADEMIC APTITUDE (SFTAA), 1970 Edition

Package Price: .55 per student

Publisher: CTB/McGraw-Hill

Type of Test: Aptitude

Level:	Total Test Time:
Level 2 (Grades 3 - 4)	34 minutes
Level 3 (Grades 5 - 6)	34 minutes
Level 4 (Grades 7 - 9)	34 minutes
Level 5 (Grades 9 - 12)	34 minutes

Sub-Scores:

Language
Non-Language
Total

Description:

The Short Form Test of Academic Aptitude (SFTAA) was developed as an instrument to assess the level of intellectual development attained by the student, and to predict his potential rate of progress and level of success in school. The test is the successor of the 1963 California Short-Form Test of Mental Maturity. The SFTAA includes four separately timed subtests which measure vocabulary development (Vocabulary), logical reasoning (Analogies), quantitative relations (Sequences), and meaningful memory (Memory). Vocabulary and Memory constitute the language section; Analogies and Sequences make up the Non-Language section.

Reliability:

Reliability estimates were computed for each grade, level, and sub-score using three different methods--internal consistency (KR20), Interlevel articulation (correlations between scores on two levels of the test administered to the same grade level), and test-retest. These ranged from .65 to .96; .77 to .89; and from .82 to .96 respectively.

Validity:

Language--Non-language correlations ranged from .51 to .66 which suggests that the two sub-scales each measured aspects (although somewhat different) of academic aptitude. The technical Bulletin also reports the relationship between SFTAA scores and California Achievement Tests scores. The two total batteries correlated as follows:

	SFTAA	CAT-70		
Level	2	2	.86	(Grade 3)
Level	3	3	.84	(Grade 5)
Level	4	4	.81 - .85	(Grade 7 - 9)
Level	5	5	.82 - .84	(Grade 9 - 12)

Test Title: GATES MacGINITIE READING TESTS (GATES), 1965 Edition

Package Price: .48 per student

Publisher: Teachers College Press

Type of Test: Reading Achievement

Level:	Total Test Time:
Level D (Grades 4 - 6)	46 minutes
Level E (Grades 7 - 9)	45 minutes
Level F (Grades 10 - 12)	44 minutes

Sub-Scores:

Speed and Accuracy--Rights
Speed and Accuracy--Attempts
Vocabulary
Comprehension

Description:

The Gates-MacGinitie Reading Tests consist of three parts: Speed and Accuracy, Vocabulary, and Comprehension. The Speed and Accuracy Test provides an objective measure of how rapidly students can read with understanding. The Vocabulary Test samples the student's reading vocabulary. The Comprehension Test measures the student's ability to read complete prose passages with understanding.

Reliability:

Alternate form reliability coefficients are reported in the Technical Manual. The ranges on the sub-tests are as follows:

Level D (.67 - .89)
Level E (.68 - .83)
Level F (not reported)

Validity:

The test publisher suggests that test users should determine content validity by examining the test items and determining their appropriateness for the goals of their specific programs. Concurrent validity studies are now under way. Initial results indicate correlations of the GATES with four other reading survey tests.

APPENDIX B

WISCONSIN DESIGN FOR READING SKILL DEVELOPMENT

STATEMENT OF SKILLS AND OBJECTIVES

FOR WORD ATTACK

STATEMENT OF SKILLS AND OBJECTIVES FOR WORD ATTACK**

Note: Skill numbers are raised and appear after skill descriptions. For example, Level A, Skill 6, is found in the outline of A.3. An i following the skill number indicates that assessment must be individually administered.

Level A

1. Listens for rhyming elements

   a. Words[1]

      Objective: Given familiar words pronounced by the teacher, child

      *indicates which of three words rhymes with a stimulus word; or
      *tells whether two words do or do not rhyme.

   b. Phrases and verses[2]

      Objective: In read or nonsense verses read by the teacher, the child

      *supplies the missing word in a verse (e.g., "The big tall man/Fried eggs in a ____"); or
      *identifies the rhyming words.

2. Notices likenesses and differences

   a. Pictures (shapes)[3]

      Objective: The child identifies shapes that are the same or different i form and orientation.

   b. Letters and numbers[4]

      Objective: The child selects the letter (upper or lower case) or number in a series that is identical to a key number of letter.
      (The child points to the letter that is the same as the first letter or number in a row--e.g.,

      P: B T P K
      s: s z e c
      9: 6 0 9 8)

c. Words and phrases[5]

Objective: The child selects the word or phrase in a series that is identical to a stimulus word or phrase (e.g., down: wand, down, bone, find; back and forth: back and find, back and forth, found it).

3. Distinguishes colors[6i]

Objective: The child identifies the color blue, green, black, yellow, red, orange, white, brown, and purple when named by the teacher.

4. Listens for initial consonant sounds[7]

Objective: Given a familiar word pronounced by the teacher, the child indicates which of three other words begins with the same consonant sound.

Level B

1. Has a sight word vocabulary[1i]

Objective: Given a maximum one-second exposure per word, the child recognizes preprimer and primer level words from the adapted Dolch sight vocabulary list.

Note: The specific preprimer and primer words are given in the list which appears on page 98. The child should be able to recognize additional sight words in instructional materials to which he has been exposed.

2. Follows left-to-right sequence[2i]

Objective: The child reacts to number or letter stimuli in a left-to-right sequence.
(The child names the letters or numbers presented in rows--e.g.,

N	C	H	P
c	o	e	g
4	7	1	2

--in a left-to-right sequence.)

3. Has phonic analysis skills

a. Consonant sounds

1) Beginning consonant sounds[3]

Objective: Given real or nonsense words pronounced by the teacher, the child

*identifies the letter that stands for the initial sound and
*tells whether two words do or do not begin alike; or
*supplies another word that begins with the same sound.

2) Ending consonant sounds[4]

Objective: Given real or nonsense words pronounced by the teacher, the child

*identifies the letter that stands for the ending sound and
*tells whether two words do or do not end alike; or
*supplies another word that ends with the same sound.

b. Consonant blends[5]

Objective: Given real or nonsense words that begin with the consonant blends bl, cl, fl, gl, pl, sl, br, cr, dr, fr, gr, pr, and tr, the child

*identifies the two letters that stand for the initial blend in words pronounced by the teacher; or
*identifies words that begin with the same blend as a stimulus word pronounced by the teacher and
*pronounces words that begin with the blends listed above.

c. Rhyming elements[6]

Objective: Given a word, the child

*selects a rhyming word based on structure (e.g., man, pan, and fan are from the same word family); or
*supplies a real or nonsense rhyming word based on structure.

d. Short vowels[7]

Objective: Given a one-syllable word with a single short vowel sound pronounced by the teacher (e.g., man, duck, doll, hop), the child

*identifies the letter that stands for the vowel sound; or
*reproduces the vowel sound.

e. Simple consonant digraphs[8]

Objective: Given real or nonsense words pronounced by the teacher, the child identifies the letters in the simple two-consonant combinations sh, ch, and th that result in a single new sound.

4. Has structural analysis skills

a. Compound words[9]

Objective: The child

*identifies compound words; or
*specifies the elements of a compound word.

b. Contractions[10]

Objective: The child

*identifies simple contractions (e.g., I'm, it's, can't)
*uses contractions correctly in sentences.

c. Base words and endings[11]

Objective: The child identifies the root word in familiar inflected words (e.g., jumping, catches, runs).

d. Plurals[12]

Objective: The child tells whether familiar words (noun plus s or es) are singular or plural.

e. Possessive forms[13]

Objective: The child identifies the possessive forms of nouns used in context.

Level C

1. Has a sight word vocabulary[14]

Objective: Given a maximum one-second exposure per words, the child recognizes first grade words from the adapted Dolch sight vocabulary list.

Note: See the list on page 98 for specific words. The child should be able to recognize additional sight words in instructional materials to which he has been exposed.

2. Has phonic analysis skills

a. Consonants and their variant sounds[2]

Objective: Given words containing variant sounds of c, s, and g (e.g., cake--city, sit--trees, go--giant), the child indicates whether the underlined letters in given pairs of words have the same or different sounds.

Note: Although the consonants c, g, s, q, d, x, t, and z have more than one sound, variant sounds of c, s, and g are most common at this level.

b. Consonant blends[3]

Objective: Given real or nonsense words beginning with the consonant blends st, sk, sm, sp, sw, and sn, the child

*identifies the two letters that stand for the initial blend in words pronounced by the teacher; or
*identifies words that begin with the blends listed above.

c. Vowel sounds

1) Long vowel sounds[4]

Objective: The child

*identifies the letter that stands for the single vowel sound in real or nonsense words pronounced by the teacher (e.g., nose, brile, cheese, seat, labe, run, mab) and indicates whether the sound is long or short; or
*pronounces real or nonse words with a single vowel sound.

2) Vowel plus r[5]

Objective: The child

*identifies the vowel that is with r in real or nonsense words pronounced by the teacher (e.g., darl, der, mur, form, girt); or

*pronounces words with r-controlled vowels (e.g., part, fur, hurt, bird).

Note: Because er, ir, and ur have the same sound, e, i, or u use the appropriate response in er, ir, and ur words.

3) a plus l[5]

Objective: The child

*identifies the letters that stand for the al sound in real or nonsense words pronounced by the teacher; or
*pronounces words in which there is an al combination (e.g., salt, ball, zall).

4) a plus w[5]

Objective: The child

*identifies the letters that stand for the aw sound in real or nonsense words pronounced by the teacher; or
*pronounces words in which there is an aw combination (e.g., draw, saw, blaw).

5) Diphthongs ew, oi, oy, ou, ow[6]

Objective: Given words containing ew, oi, oy, ou and ow, the child

*identifies the diphthong in nonsense words pronounced by the teacher; or
*pronounces words containing diphthongs.

6) Long and short oo[7]

Objective: The child

*indicates whether the oo in words has the long oo (e.g., choose) or the short oo (e.g., book) sound; or
*pronounces words in which there is an oo combination.

d. Vowel generalizations

1) Short vowel generalization[8]

Objective: Given real or nonsense words in which there is a single vowel and a final consonant (e.g., bag, his, cat, gum), the child

*tells whether the words are pronounced according to the generalization; or
*pronounces the words giving the vowel its short sound.

Note: Children should learn that some familiar sight words are exceptions to this generalization (e.g., bold, find, sight, wild).

2) Silent e generalization[9]

Objective: Given real or nonsense words that have two vowels, one of which is a final e separated from the first vowel by a consonant (e.g., cake, cube, mape, jame), the child

*tells whether the words are pronounced according to the generalization; or
*first attempts pronunciation by making the first vowel long and the final e silent.

Note: Children should learn that some familiar sight words are exceptions to this generalization (e.g., come, have, prove).

3) Two vowels together generalization[10]

Objective: Given real or nonsense words that have two consecutive vowels (e.g., boat, meet, bait, deach), the child

*tells whether the words are pronounced according to the generalization; or
*first attempts pronunciation by making the first vowel long and the second vowel silent.

Note: Children should learn that some familiar sight words (e.g., bread, August) and words containing diphthongs are exceptions to this generalization.

4) Final vowel generalization[11]

Objective: Given real or nonsense words in which the only vowel is at the end (e.g., go, she, thi), the child

*tells whether the words are pronounced according to the generalization; or
*pronounces the words giving the vowel its long sound.

Note: Children should learn that some familiar sight words are exceptions to this generalization (e.g., do, who).

e. Common consonant digraphs[12]

Objective: Given real or nonsense words pronounced by the teacher, the child identifies the letters in the two-consonant combinations ch, nk, sh, ng, th, and wh that result in a single new sound.

3. Has structural analysis skills

a. Base words with prefixes and suffixes[13]

Objective: The child selects base words with or without affixes that are appropriate to the context.

b. More difficult plural forms[14]

Objective: The child tells whether more difficult plural forms (e.g., mice, ladies, children) are singular or plural.

4. Distinguishes among homonyms, synonyms, and antonyms

a. Homonyms[15]

Objective: Given a sentence context, the child chooses between homonyms (e.g., Mother bought some meet/meat for dinner).

b. Synonyms and antonyms[16]

Objective: The child tells whether words in a pair have the same, opposite, or simply different meanings.

5. Has independent and varied word attack skills[17i]

Objective: In both self-directed and teacher-directed reading, the child uses a variety of skills (e.g., picture clues, context clues, structural analysis, sound/symbol analysis, comparison of new to know words) in attacking unknown words.

Note: The objective can be assessed through an individually-administered informal reading inventory or by teacher observation.

6. Chooses appropriate meaning of multiple-meaning words[18]

   Objective: Given a multiple-meaning word in varied contexts, the child chooses the meaning appropriate to a particular context.

Level D

1. Has a sight word vocabulary[11]

   Objective: Given a maximum one-second exposure per word, the child recognizes second and third grade words from the adapted Dolch sight vocabulary list.

   Note: See the list given on page 99 for specific words. The child should be able to recognize additional sight words in instructional materials to which he has been exposed.

2. Has phonic analysis skills

   a. Three-letter consonant blends[2]

      Objective: The child identifies the letters in the three-letter blends scr, shr, spl, spr, str, and thr in real or nonsense words pronounced by the teacher.

   b. Simple principles of silent letters[3]

      Objective: Given words containing silent letters (e.g., knife, gnat, write, dumb, doubt, high, flight, eat, four, believed), the child

      *identifies the silent letters; or
      *pronounces words containing silent letters.

      Note: Silent consonants commonly occur in the following combinations: (k)n, (g)n, (w)r, (b)t, i(gh), (t)ch.

3. Has structural analysis skills

   a. Syllabication[4]

      Objective: The child divides words into single-vowel sound units by applying syllabication generalizations.

b. Accent[5]

Objective: The child indicates the accented part (syllable) in familiar words, primarily two-syllable ones.

c. Unaccented schwa[6]

If the unaccented schwa is included in the developmental reading program, this skill can be taught; if the schwa is not included, this skill can be omitted. Although the ability to identify the schwa sound has little inherent value, the child who is aware of the existence of the schwa sound may be more successful in sounding vowels than the child who is not.

Objective: Given words that he knows, the child specifies the unaccented syllable containing a schwa.

Note: Although the short sound of u in, say, puppy has the same sound as that of the schwa, it is not a schwa because it is in the accented syllable.

d. Possessive forms[7]

Objective: The child identifies possessive nouns and pronouns used in context.

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APPENDIX C

BREAKDOWN OF THE ADAPTED DOLCH BASIC WORD LIST BY LEVELS

BREAKDOWN OF THE ADAPTED DOLCH

BASIC WORD LIST BY LEVELS

Level B: Preprimer

a	find	is	not	three
and	for	it	one	to
away	funny	jump	play	two
big	go	little	red	up
blue	help	look	run	we
can	here	make	said	where
come	I	me	see	yellow
down	in	my	the	you

Level B: Primer

all	do	no	say	want
am	eat	now	she	was
are	four	on	so	well
at	get	our	soon	went
ate	good	out	that	what
be	have	please	there	white
black	he	pretty	they	who
brown	into	ran	this	will
but	like	ride	too	with
came	must	saw	under	yes
did	new			

Level C: First Grade

after	fly	his	old	take
again	from	how	once	thank
an	give	just	open	them
any	going	know	over	then
as	had	let	put	think
ask	has	live	round	walk
by	her	may	some	were
could	him	of	stop	when
every				

Level D: Second Grade

always	does	its	sit	very
around	don't	made	sleep	wash
because	fast	many	tell	which
been	first	off	their	why
before	five	or	these	wish
best	found	pull	those	work
both	gave	read	upon	would
buy	goes	right	us	write
call	green	sing	use	your
cold				

Level D: Third Grade

about	eight	hurt	myself	six
better	fall	if	never	small
bring	far	keep	only	start
carry	full	kind	own	ten
clean	got	laugh	pick	today
cut	grow	light	seven	together
done	hold	long	shall	try
draw	hot	much	show	warm
drink				

APPENDIX D

INSTRUCTIONAL MANAGEMENT MODEL FOR THE IMPROVEMENT OF READING

AN INSTRUCTIONAL MANAGEMENT MODEL FOR
THE IMPROVEMENT OF READING
IN-SERVICE ASSESSMENT

Name _____

Which of the following are true about the use of tests and test scores in the proper implementation of the Wisconsin Design for Reading Skill Development. Check all those which apply.

1. _____ Standardized test scores are often used to group children.

2. _____ Criterion-referenced tests form the backbone of the individualized assessment program.

3. _____ Assessment takes about the same amount of time in individualized reading programs as in other programs--for instance, a basal program.

4. _____ Frequent, short tests characterize the assessment program.

5. _____ All individuals in the class are usually administered the same test.

6. _____ Children are placed in the instructional sequence after assessment.

7. _____ Objective-based assessment is appropriate after, not before, instruction is carried out.

8. _____ Observations and teacher judgment are more appropriate as pre-assessment than as post-assessment techniques.

9. _____ Often instead of pretesting, the teacher can assume that children have not mastered an objective because it has not been dealt with instructionally.

10. _____ Children need a period of readiness, adjustment, or total class activity before specific evaluative information is used to form groups.

11. _____ The validity of an objective-based test is established by comparing each item to the behavioral objectives.

12. _____ Once a child is properly placed in the instructional program, pre-assessment is largely unnecessary.

13. _____ Groups formed on the basis of assessment scores may be modified by teacher judgment.

Rate the following items in terms of your understanding for implementation in the reading program. Check only one answer for each question.

14. WTSD booklet tests (machine scored tests) are to be administered:

_____ a. at the end of each nine weeks

_____ b. within four weeks after school starts

_____ c. whenever a child needs to be assessed

_____ d. only at the end of the school year

15. When implementing the Design, children's placement into skill groups is based upon their:

_____ a. scores on standardized reading achievement

_____ b. scores on WTSD: booklet testing (machine-scored tests)

_____ c. performance in developmental reading group

_____ d. scores on the Guides to Informal Individual Skill Observation

16. In the outline of reading skills there are _____ major skill areas:

_____ a. four

_____ b. five

_____ c. six

_____ d. seven

17. The Guides to Informal Individual Skill Observation are to be used as:

_____ a. "teacher helps" to ascertain pupil skill development

_____ b. "break-in" tests for the program

_____ c. answer sheets for the individual assessment tests

_____ d. both b and c

18. According to the Teacher's Planning Guide skill instruction should be given a minimum of:

_____ a. one hour per week

_____ b. two hours per week

_____ c. three hours per week

_____ d. four hours per week

19. WTSD separate tests (teacher scored tests) are to be administered:

_____ a. within four weeks after school starts

_____ b. at the end of each nine weeks

_____ c. whenever a child needs to be assessed

_____ d. only at the end of the school year

20. Individual children should move out of a skill group:

_____ a. after one week of instruction if it's an easy skill

_____ b. whenever they appear to have grasped the skill

_____ c. at the end of the instructional cycle

_____ d. after the skill has been covered in the basal reader

21. The Guidelines for Self-Directed, Interpretive, and Creative Reading skills:

_____ a. list a series of observable behaviors teachers should include in a complete reading program

_____ b. list a series of closed objectives for areas IV, V, IV to be used after students have completed levels A through D of the Word Attack component

_____ c. list a series of assessment exercises for areas IV, V, VI

_____ d. both b and c

22. In deciding the skills to be taught in an instructional cycle, teachers should give highest priority to:

_____ a. the skills many children have mastered

_____ b. the skills few children have mastered

_____ c. the skills developed from independent work

_____ d. the skills having the most entries in the Teacher Resource file

23. The purpose of the Teacher Resource file is to:

_____ a. provide a model for development of a local file

_____ b. provide a complete listing of commercial materials

_____ c. provide a complete listing of teacher-directed activities

_____ d. both b and c

24. The Wisconsin Design for Reading Skill Development is intended to serve as a:

_____ a. basal reading program

_____ b. language arts program

_____ c. remedial program

_____ d. none of these

25. The Teacher Resource File contains:

_____ a. a list of published materials keyed to the skill list

_____ b. a list of teacher directed activities keyed to the skill list

_____ c. both a and b

_____ d. a list of assessment exercises

26. As a "rule of thumb", skill groups should usually last no longer than:

_____ a. one week

_____ b. two weeks

_____ c. three weeks

_____ d. four weeks

27. Individual skill development records do not:

_____ a. provide guidelines for the teaching of the skills

_____ b. provide assistance in the formation of the instructional groups

_____ c. become the basis for pupil-teacher conferences

_____ d. facilitate communication among teachers regarding students reading achievement

AGENDA

READING INSTRUCTION MANAGEMENT MODEL WORKSHOP
June 18-28

I. Introduction to the Wisconsin Design

A. Need

B. Components

1. Rationale and Guidelines
2. Teachers Planning Guide
3. Tests and Manuals
4. Guides to Informal Assessment
5. Pupil Profile Cards
6. Resource Files

II. Reading Skills and Objectives

A. Behavioral Objectives

B. Discussion Groups--Levels A, B, C, D

III. Assessment

A. Finding the Need

B. Comparison of Objectives and Tests

1. Read Objective
2. Read Instructions for Administering Tests
3. Look at Test Items

IV. Teacher's Resource Files

A. A Matter of Resources

B. Simulation Exercise: Coding of Materials

V. Profile Cards

A. Preparing for Instruction

B. Discussion of Profile Cards and Record Keeping

VI. The Design in Operation

A. Wisconsin Design in the Overall Developmental Reading Program

B. Discussion

1. Basal Reader Approach

2. Language Experience Approach

3. Individualized Approach

VII. Roles of Individuals

A. Teacher

B. Teacher-aide

C. Reading Specialist

D. Principal

E. Coordinator

VIII. District Evaluation

A. Report--Audit Committee

B. Teacher Questionnaire

IX. Begin Compiling Resource Files

A. Reading Specialist Assigned to Each Group to Assist in Preparing Files

WATERFORD SCHOOL DISTRICT
READING INSTRUCTION MANAGEMENT MODEL

Staff Questionnaire

Title III

1. Teaching experience

   ( ) Less than 3 years
   ( ) 3-5 years
   ( ) More than 5 years

2. Level presently teaching

   ( ) Lower elementary
   ( ) Upper elementary

	Yes	No	No Response
3. Was enough in-service training provided?			
4. Did the in-service adequately prepare you to implement the Design in your classroom?			
5. Are the materials in the teacher's resource files adequate for teaching all or almost all skills?			
6. Have you added new materials to the teacher's resource files?			
7. Do you feel you can use materials more efficiently and effectively in teaching specific word attack skills?			
8. Do you feel the Wisconsin Design tests are more valuable than standardized tests for grouping children for skill instruction?			
9. Do you feel teaching word attack skills is relevant to reading achievement?			

	Yes	No	No Response
10. Are you more aware of a sequence of reading skills and how to teach these skills?			
11. Do you feel better qualified to group your students for instruction in specific word attack skills?			
12. Do you feel better qualified to diagnose your students strengths and weaknesses in reading?			
13. Do you feel better qualified to select materials appropriate to the weaknesses of your students in word attack skills?			
14. Do you feel better qualified to evaluate the progress your students have made in acquiring word attack skills?			
15. Were students given an opportunity to apply the skills they were learning?			
16. Was enough time provided for grouping and preparing for skill instruction?			
17. Has the Wisconsin Design helped you individualize reading instruction?			
18. Were enough support services provided (aides, coordinator, LIC reading specialist, principal)?			
19. Are aides necessary to help implement and operate the program?			
20. Do you plan to continue using the Wisconsin Design next year?			

If no, why not? _____

_____

21. Do you feel we should begin working on comprehension and study skills?			
22. Do you feel the Wisconsin Design has positively influenced the reading skills of your students?			
23. Are you working with another teacher for skill instruction?			

24. How much time is allowed for skill instruction?

( ) Less than 90 minutes per week
( ) 90-120 minutes per week
( ) 120-150 minutes per week
( ) more than 150 minutes per week
( ) No Response

25. On the average, how long does a skill group last?

( ) 1 week
( ) 1½-2 weeks
( ) 2½-3 weeks
( ) 3½-4 weeks
( ) No Response

26. What do you feel is the optimal number of days for skill groups to meet?

Levels A & B _____ school days for _____ minutes.
Levels C & D _____ school days for _____ minutes.

27. What do you feel were the major advantages in implementing the Wisconsin Design? (Check all that apply.)

_____ focus on specific word attack skills
_____ assisted in a flexible school organization
_____ increased individualization
_____ increased student motivation
_____ increased communication between teachers
_____ increased communication between principal and teachers
_____ increased communication between school and home
_____ increased teacher knowledge of word attack skills
_____ increased pupil learning of word attack skills
_____ better utilization of instructional materials
_____ increased student independent work habits
_____ increased teacher interest in reading instruction

28. What do you feel were the major problems in implementing the Wisconsin Design? (Check all that apply.)

_____ lack of time for planning
_____ lack of time for testing
_____ lack of inter-teacher cooperation
_____ lack of teacher-prepared materials
_____ lack of commercially produced materials
_____ coordinating WDRSD: Word Attack program with on-going reading program
_____ scheduling of students between skill groups
_____ scheduling of students to independent activities after skill mastery
_____ keeping pupil profile cards up to date
_____ lack of administrative and/or central office support

_____ other (please specify)

1. Application of skills in basic reading
2. Lack of time for other necessary skills--math, etc.

Additional comments, suggestions, etc.

BIBLIOGRAPHY

BIBLIOGRAPHY

Atkinson, R. C. "Computerized Instruction and the Learning Process." American Psychologist 23 (April 1968): 225-239

Baker, E. L. Experiments in Kindergarten Reading. Inglewood, Calif.: Southwest Regional Laboratory, 1969.

Beck, I. L. and Bolvink, J. O. "A Model for Non-Gradedness: The Reading Program for Individually Prescribed Instruction." Elementary English 46 (February 1969): 130-135.

Brown, A. "What Could Be Bad? Some Reflections on the Accountability Movement." English Journal 62 (March 1973): 461-463.

Brown, R. W. Bill. "A Systems Approach to Performance Based Instruction." Educational Technology 15 (April 1975): 58

California Test Bureau. Comprehensive Tests of Basic Skills, Technical Manual. Monterey, California: McGraw-Hill Book Company, 1968.

Chall, Jeanne. Learning to Read, The Great Debate. New York: McGraw-Hill Book Co., 1967.

Clelard, Donald L. and Miller, Harry B. "Instruction in Phonics and Success in Beginning Reading." Elementary School Journal 65 (February 1965): 278-282.

Cohn, Stella M. and Cohn, Jack. Teaching the Retarded Reader. New York: Odyssey Press, Inc., 1967.

Combs, A. W. "Human Side of Learning." National Elementary Principal 52 (January 1973): 38-42.

Combs, A. W., Avila, D. L. and Purkey, W. W. The Helping Relationship Source Book. Boston: Allyn and Bacon, 1971.

Dechant, Emerald V. Improving the Teaching of Reading. Englewood Cliffs: Prentice-Hall, Inc., 1964.

Dechant, Emerald. "Teacher Differences and Reading Method." Education 86 (September 1965): 40-43.

Fay, Leo. "Trends in the Teaching of Elementary Reading." Phi Delta Kappan 41 (May 1960): 345-348.

Flanagan, J. C. "Individualizing Education." Education 90 (February-March 1970): 191-206.

Gates, Arthur I. and MacGinitie, Walter H. Gates-MacGinitie Reading Tests Technical Manual. New York: Teachers College Press, 1965.

Guilford, J. P. The Nature of Human Intelligence. New York: McGraw-Hill Book Co., 1967.

Harris, Albert J. How to Increase Reading Ability. New York: Longmans, Green, 1956.

Heckerl, John R. "Waterford School District--Evaluation Report of an Instructional Management Model for the Improvement of Reading." A report submitted to the Michigan Department of Education--Experimental and Demonstration Centers Program. (July 1973).

Heckerl, John R. "Waterford School District--Evaluation Report of an Instructional Management Model for the Improvement of Reading." Second report submitted to the Michigan Department of Education--Experimental and Demonstration Centers Program. (July 1974).

Hull, Roland E. "Selecting an Approach to Individualized Instruction." Phi Delta Kappan 55 (November 1973): 169-173.

Johnson, Barbah Lea. "Maximum Teacher Effectiveness." The Reading Teacher 23 (November 1969): 126-131.

Johnson, Dale D. and Pearson, David P. "Skills Management Systems: A Critique." The Reading Teacher 28 (May 1975): 757-764.

Klausmeier, H. J., Quilling, M., Sorenson, J. S., Way, R. S. and Glasrud, G. R. Individually Guided Education and the Multi-Unit Elementary School. University of Wisconsin Research and Development Center for Cognitive Learning. 1971.

McLoughlin, William P. "Individualization of Instruction vs. Nongrading." Phi Delta Kappan 53 (February 1972): 379-380.

Michigan Department of Education Research, Evaluation and Assessment Services. Michigan Educational Assessment Program First Report. "Objectives and Procedures." (August 1973).

NEA Reporter. (July 24, 1970).

Otto, Wayne and Askov, Eunice. Rationale and Guidelines: The Wisconsin Design for Reading Skills Development. National Computer Systems, 1972.

Piaget, Jean. The Origins of the Intelligence in Children. Trans., M. Cook. New York: International Press, 1952.

Selden, Steven and Apple, Michael W. "What May a 75-Year Involvement with the Language and Ideology of Business Tell Us.," Educational Leadership 32 (April 1975): 453.

Skinner, B. F. Science and Human Behavior. New York: Macmillan Publishing Co., 1953.

Skinner, B. F. "Teaching Machines." Scientific American 205 (November 1961): 90-102.

Smith, Nila Banton. American Reading Instruction. Park Ridge, Ill.: Silver Burdett Company, 1965.

Smith, Nila Banton. "What Have We Accomplished in Reading." Education Digest 22 (September 1961): 40-43.

Stanford University. Fletcher, J. C. and Atkinson, R. C. "An Evaluation of the Stanford CAI Program in Initial Reading (Grades 1 through 13)." 1971.

Stauffer, Russel G. "Individualized Reading Instruction--A Backward Look." Elementary English 36 (May 1959): 335-341.

Strang, Ruth. Diagnostic Teaching of Reading. New York: McGraw-Hill Book Co., 1964.

Sullivan, H. J. Experiments in Kindergarten Reading. Inglewood, Calif.: Southwest Regional Laboratory, 1969.

Testing Catalog. Pontiac, Michigan: Oakland Schools (1974-75).

Thomas, R. M. and Thomas, S. M. Individual Differences in the Classroom. New York: McKay, 1965.

Wallach, M. A. and Kogan, N. Modes of Thinking in Young Children. New York: Holt, Rinehart and Winston, Inc., 1965.

Waterford School District. "Waterford Model for Instructional Planning." 1974.

Waterford School District. Research and Evaluation Division. "Needs Assessment Report to the Board of Education, Section E." 1972.

Wozencraft, Marian. "Reading Methods When Grandmother was a Girl." Journal of Reading 8 (January 1965): 155-162.

Wright, C. E. "Evaluation Data and Their Uses in an Individualized Educational Program." Arlington, Virginia ERIC Document Reproduction Service, ED 045 724. Project PLAN Progress Report. (September 1970).

Wright, Calvin E. "Project PLAN Progress Report." Education 90 (February 1970): 261-269.